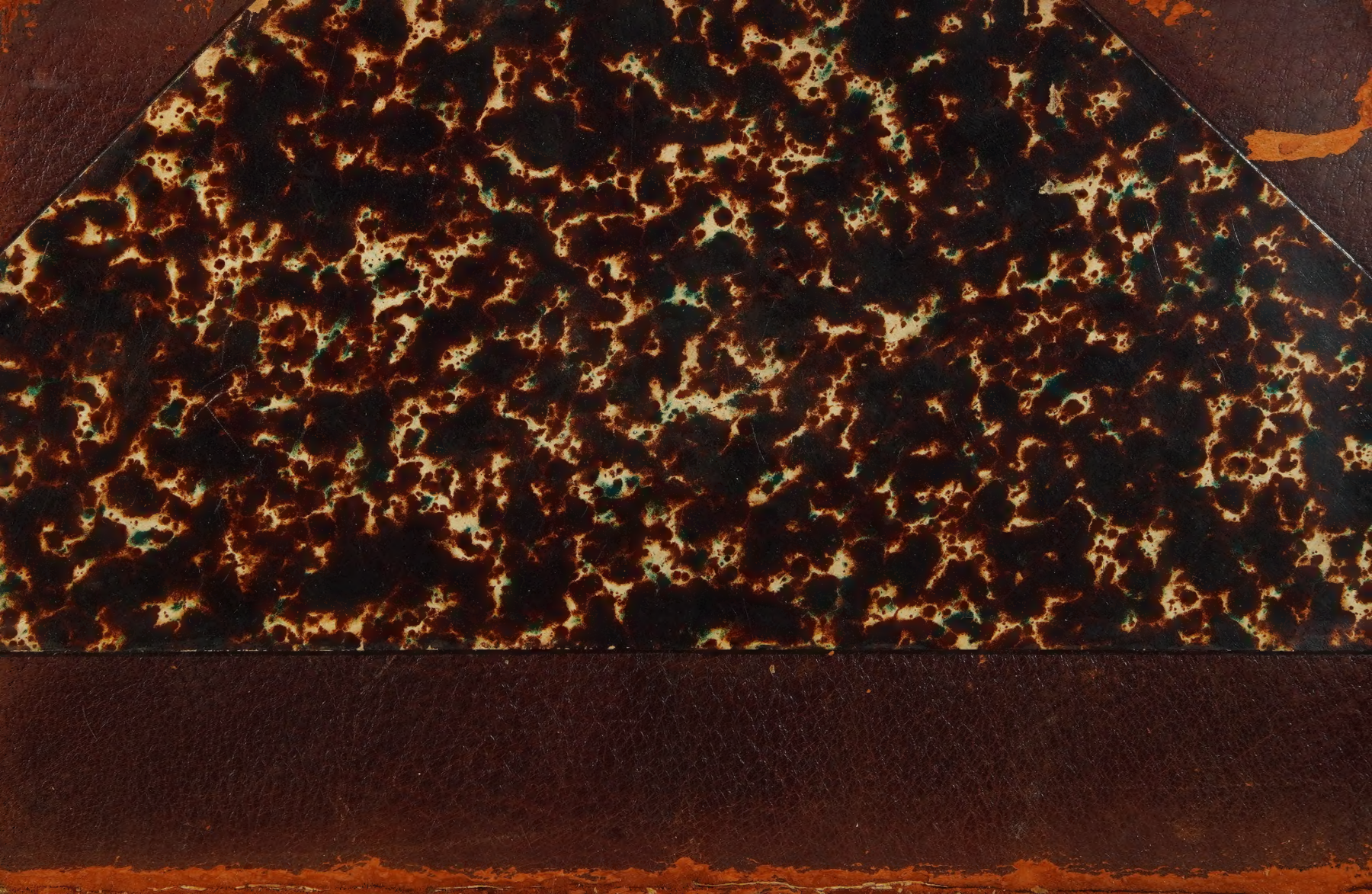

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ORIGINAL COMMUNICATIONS.

ETIOLOGY OF IDIOPATHIC HYPERTROPHY OF THE HEART.

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THE recognition of hypertrophy of the heart during life dates from the discovery of Avenbrugger, whose *Inventum Novum*, published in 1761, made it possible by percussion to outline the limits of the heart. This discovery, *inter tædia et labores* (every writer knows the phrase and appreciates the fact), found no general acceptance until the unknown or forgotten work of the obscure country practitioner was resuscitated by the brilliant Corvisart, who recognized its worth and published it in French, in 1811. By the use of this means of study, Corvisart was able, as he declared, to diagnosticate hydrops pericardii (*i.e.*, chiefly pericarditis) and aneurism of the heart, by which term was then understood what we now know as dilatation. It was only by the time of Stokes (1850) that it began to be possible to separate these conditions. Every clinician then became familiar with the hypertrophy which occurred in the course of valve lesions, and with the dilatation consecutive to the hypertrophy.

But as long ago as 1827, Richard Bright had called attention to the enlargement of the heart which occurred in the course of disease of the kidneys, and in 1856 Traube, who made a special study of this subject, pointed to enlargement of the heart as a sign of Bright's disease. The study of the cause of this relationship, or of the dependence of hypertrophy of the heart upon occlusion in the kidneys, led directly to the recognition of arterio-sclerosis, or, as it was called later by Gull and Sutton, arterio-capillary fibrosis, as a condition which puts obstacles in the way of

the circulation, and leads as a mechanical consequence to hypertrophy of the heart.

Hypertrophy of the heart in the course of pregnancy was noticed first by Larcher, in 1859, and the condition seemed to be established by the French observers, especially by Menière and Jacquemier. But Gerhardt threw doubt upon the existence of hypertrophy in this condition by attributing the increase in dulness to the higher position of the diaphragm and protrusion of the heart against the wall of the chest. The objections seemed to have been verified by Löhlein, so that there was a general inclination to surrender the view until it met with renewed support by Bollinger in 1893. Since Bauer (1860) reported a number of cases of simple hypertrophy, and Da Costa (1867) noticed the effects of irritation of the heart in army life, the fact that the heart may undergo hypertrophy independent of any obstacle to the circulation in the heart itself—that is, independent of any valve lesion —has been universally established.

These cases of enlargement of the heart, in which the increase in volume cannot be attributed to any obstacle in the heart itself, are inappropriately distinguished as idiopathic hypertrophies. The term is a misnomer, from the fact that in most cases the cause of the condition can be determined as something which raises the blood-pressure, and in this way opposes the work of the heart. In certain cases the cause of hypertrophy remains concealed; these cases may be called cryptogenetic, but in no case may the hypertrophy be considered as essential autochthonous or idiopathic; these are all terms which should be abolished in the etiology of disease. The expression peripheral hypertrophy is too inexact, and hypertrophy from peripheral cause is too elastic. But the term idiopathic hypertrophy has become so thoroughly incorporated into the history of heart-disease as to justify the use of it now as something generally understood.

As observations multiply it is seen that this so-called idiopathic hypertrophy, so far from being rare, is common. A number of cases were reported in the beginning of the seventh decade of this century by Meyer, Da Costa, Clifford Allbutt, and Thurn. Fraentzel reported nineteen cases of dilatation and hypertrophy which occurred in consequence of the strain of the campaigns of 1871. Schmidbauer and Athmann found the affection very frequent in Munich. In fact, the condition has now become so common that while in older text-books this hypertrophy was given but scant description, it is now allotted greater length than hypertrophy from valve-disease.

It would be inexcusable to occupy the time of this assembly with any anatomical statements regarding the measurement of the heart, or questions of multiplication of its fibres, or with any citation of remarkable cases. These interesting subjects do not belong to this discussion. I may repeat, only to freshen the memory, that the heart of a man weighs on the average about nine ounces, of a woman eight ounces; that anything over twelve ounces in a man and over ten ounces in a woman constitutes hypertrophy; that Stokes recorded a heart that weighed sixty ounces; that clinicians call

a heart hypertrophied (or dilated) when the apex is dislocated to the left of the mammillary line, or the right border can be recognized to the right of the right border of the sternum ; but that they must often make a diagnosis without the aid of percussion, which is too coarse for the appreciation of subtle changes ; finally, that nothing is so deceptive as the so-called triangulation of the heart.

From an etiological stand-point, hypertrophies of the heart may be divided into the following groups:

1. Hypertrophies due to obstacle in the heart itself. This condition is typically represented by lesions of the valves.

2. Hypertrophies due to increased resistance in the vascular system.

3. Hypertrophies due to diseases of the heart muscle itself, from infection, overstrain, degeneration, etc.

4. Hypertrophies due to affection of the nervous system.

The hypertrophy which occurs in consequence of valve-disease has an obvious cause. Forget speaks of this hypertrophy as a retrohypertrophy, and compares it to that which occurs in the bladder in the face of an obstacle in the urethra, that of the stomach which occurs in an obstruction at the pylorus, or in the œsophagus or intestine behind strictures. This hypertrophy is, therefore, in no sense idiopathic.

Germain Sée called attention to a hypertrophy of growth, which he describes as a precocious development of the heart under a tardy development of the thorax. This disproportion disappears with age, but, if it should precede it, entails interference with the pulmonary circulation and hypertrophy of the right heart.

Bloch set out to establish the reality of this hypertrophy of growth, but retreated and took refuge in the hereditary predisposition. This predisposition shows itself in children of tuberculous, alcoholic, and neuropathic parentage. The children in these cases showed degenerated hearts, and hypertrophy set in as early as the age of seventeen years.

Next comes the question of the condition of the heart in pregnancy.

Ducrest took the trouble to measure the heart in one hundred women, aged twenty to thirty years, who had died in puerperium, and found that the wall of the ventricle was distinctly and decidedly thickened. Thus, Bizot had fixed the average thickness of the ventricle in women at 0.010 metre. Ducrest found it in puerperium varying from a minimum of 0.011 to a maximum of 0.018 metre. This difference constitutes a real hypertrophy, but it cannot be recognized by percussion.

On the other hand, Löhlein weighed the hearts of nine women, of varying sizes,—large, medium, and small,—in puerperium, and found the average to be 245 grammes (7¾ ounces). This weight corresponded exactly with that fixed by Clendennin in healthy women of average weight from the twentieth to the sixtieth year of life.

As already remarked, the claim made by Larcher and supported by a number of French observers, that the heart undergoes hypertrophy in

pregnancy, was doubted by Gerhardt and seemed to have been overthrown by Löhlein, but was re-established by Bollinger with an accurate study of 76 cases (1879–1890), in 67 of which the weight of the heart was established post mortem. Of these 67 cases, 9 died during pregnancy, 7 on the day of labor, 32 in the first week, 14 in the second, 1 in the third, 3 in the fourth, and 1 in the fifth week. Accurate measurement showed that the heart increases in weight in pregnancy. The hypertrophy is most marked in young life, least in emaciated women. The increase in weight during pregnancy, 8.8 per cent. of the normal weight, corresponds to the increase in weight of the body of the mother, including the fœtus. Dreysel showed that the increase affected both ventricles and concerned the thickness of the walls as well as the diameter of the cavities. This increase continues uninterrupted from the first months of pregnancy up to the day of labor. Then follows a reduction, rapidly at first, more slowly later. The cause of the hypertrophy is to be attributed to the increased work thrown upon the heart in supplying the mammæ, the uterus, and the placental circulation. Moreover, pregnancy increases the quantity of blood. This fact was demonstrated by Spiegelberg and Gescheidler in the case of pregnant dogs, and by Heissler in the case of pregnant sheep, in which animal the increase is nearly one-fourth of the physiological quantity of blood.

Henning was able to make an exact demonstration of hypertrophy of the heart which developed in consequence of a myoma uteri. This author also reported four cases in which palpitations and tumultuous action subsided after removal of tumors of the uterus.

Next must be considered the hypertrophy of work. Studies in comparative anatomy show that the size of the heart increases in proportion to the muscular effort. Bollinger made a number of these investigations, showing that animals which have to furnish enormous muscular power, and certain birds distinguished by velocity and long duration of flight, are endowed with larger development of the heart muscle. The smallest heart among birds is found in the heathpout, 4.09 per thousand. This animal lives a quiet and comfortable life on the earth. The buzzard, a lazy bird of prey, which only hunts mice, etc., shows 8.02 to 8.30 per thousand heart-weight. The goose shows 8, the partridge 9.17, and the weight rises through the scale according to the velocity and duration of flight, up to the thrush, whose heart weighs 25.6 per thousand. The horse, dog, chamois, hare, and deer show relatively heavy hearts. That of the deer, for instance, is twice as great as that of man. Miller proved that hypertrophy chiefly concerns the muscle of the left ventricle in draught, running, and hunting dogs in consequence of excessive bodily strain. The same increase in volume occurs in man in correspondence with the character of the work. Thus, Bauer called attention to the hypertrophy of the heart in the woodcutters of the mountains, the mountain climbers, hunters, etc.

Germain Sée speaks of the hypertrophy of the heart in workingmen as

the *cœur du travail*, which he observed in vocations requiring a sustained effort, as in blacksmiths, porters, musicians who play wind instruments, soldiers under forced marches, etc. Excessive or sustained contraction strains the heart and interrupts the circulation of the blood, but this evil is counteracted by the dilatation of the vessels which take place in exercise. Oliver's studies with the arteriometer illustrate the feeding of the brain and body by this process. The gymnast, the ball-player, and the bicycle-rider furnish a contingent of cases of excessive muscular contraction, and often of heart-strain, hypertrophy, and exhaustion.

Disregarding now congenital contraction of the aorta—fine cases of which, recognized in life, are reported by Fraentzel and Penzoldt—hypertrophy from increased resistance in the vascular system may be introduced by the study of the effects of plethora. The quantity of blood is directly increased after every meal, as but a small proportion of the ingesta escapes directly from the body through the emunctories. Where the processes of life are active, the consumption corresponds to the ingestion, and the weight of the body remains practically the same. But when the mode of life is more inactive or sluggish, the quantity of blood accumulates to constitute the condition of true plethora. The blood corpuscles may increase in number from four million to seven million to the cubic millimetre, and the hæmoglobin may increase from thirteen per cent. to sixteen per cent. There is even greater increase in the fluid element.

Now, it is a question if plethora alone may produce hypertrophy of the heart. Balfour scouts the idea, and declares outright that there is in fact no physiology that teaches us that excessive nutrition promotes cardiac hypertrophy. There is no hypertrophy of the heart among the Strassburg geese, stuffed to repletion to supply the market with *foie gras*. Nor did any one ever hear, he says, of a young porker fattened for the butcher having enlargement of the heart. There must be some peripheral obstruction to start the hypertrophy. Sommerbrodt will not even admit the hypertrophy of work. He says there must be more to account for it, and appeals to the loss of the depressor reflex that makes the heart lose control of its capillaries.

As age advances the tendency to inactivity of the body increases. At the same time the appetite instead of being impaired is improved. The tissues actually demand more food to supply the waste of age. Frequently food is taken in excess, and accumulations in the blood are favored by a more prolonged rest after meals. The increase in the quantity of blood is indicated in the fulness of the vessels, in the flushing of the face, headache, in the tension of the pulse, increased impact of the heart, short breath, attacks of palpitation, and dyspnœa. When with the increase in the quantity of food, whether absolute or relative to the wants of the body, large quantities of liquid are likewise ingested, the plethora is all the more quickly developed. Individuals who have worked hard and have probably led abstemious lives, with the acquisition of a fortune easily drift into

habits of luxury. The food is richer and more abundant, and is ingested with libations of wine. These individuals begin to gain weight, become fat and florid, and soon find that every effort is attended with palpitation and dyspnœa. The distress on the part of the heart is announced at first by occasional attacks of palpitation, as after dining out or at some public banquet. The sleep is disturbed by nightmare. There is a sense of fulness about the head, vertigo in stooping over, as to button the shoe, or in any act of straining, as at stool. The individual is said to become puffy and paunchy, and by this time the hypertrophied heart is beginning to flag in its efforts to force the blood through the distended vessels. So frequently is this condition observed in the upper classes as to be distinguished as the plethora of luxury, or what the German writers call "luxus consumption." The child of luxury soon becomes familiar with the fact that life has its compensations in every direction, and the rich merchant, public official with a sinecure, and successful professional man learns that dignity may be secured without ease, and that *non in otio quies.*

Alcohol in any form acts in various ways in the development of hypertrophy of the heart; first, as a chemical poison in the production of arterio-sclerosis, chiefly in the stronger forms, as in brandy, whiskey, etc.; second, by increasing the quantity of blood in a mechanical way, chiefly in the weaker forms, as in wine, and more especially in beer. Alcohol acts also upon the nervous mechanism of the heart. Bollinger called especial attention to the great frequency of heart-disease in Munich, with the statement that it ranks in that city as third among the causes of death. Sendtner had already observed that the mortality from heart-disease of brewers and workers with beer was much greater than the general mortality. The blood-pressure and pulse-frequency are directly increased after the ingestion of any kind of fluid, but they are highest after beer, probably on account of its carbonic acid gas and alcohol, and possibly from the preponderance of potash salts. Next in descending series after beer are brandy, wine, coffee, tea, cocoa, water. Bollinger observed that after the ingestion of a pint of water during work by a strong girl, aged twenty-two, the blood-pressure returned to the normal in the course of one hour, but after the ingestion of a pint of wine and water or of a pint of beer, under the same work, the blood-pressure reached the normal only after two hours. The bloated beer-drinkers of our own country nearly all suffer in the course of a few years from dilatation of the heart, the consequence of previous hypertrophy. Billings showed that the mortality of dealers in liquor from twenty-five to sixty years of age from diseases of the circulatory system was one hundred and forty, while that of men generally was one hundred and twenty to the thousand. My experience with brewers leads me to believe there is a much greater disproportion. Where luxurious habits, especially the ingestion of alcohol, are associated with disease,—for instance with syphilis, which is the real progenitor of arterio-sclerosis,—or where the heart is kept in a state of excitation by nerve-irritants, strong

coffee, tea, and tobacco, the effect upon the heart is even more rapid and certain. The hypertrophy of the heart which occurs in age directly introduces the subject of arterio-sclerosis.

Charcot commented upon the fact that, while every other organ in the body shrinks in volume in advancing years, the heart preserves its natural size, and in some cases undergoes a real hypertrophy. Cohnheim also noticed the fact that the heart of an old person does not, as a rule, participate in the general atrophy of the body, especially of the muscles, but rather increases in mass and volume. Beneke believed that only those individuals reach advanced life who are naturally endowed with strong hearts, and that age is not a possible inheritance of all, but only a select few destined to it from birth; but Balfour cites this view only to refute it with the declaration that he has seen too many weak hearts, and even hearts mechanically defective, attain advanced age to be able to regard the idea as even approximately true.

Arterio-sclerosis is the most pronounced factor in the process of senile involution. The so-called natural death occurs by the process of arterio-sclerosis.

Without knowing the steps of this process, Bichat, with the prescience of genius, said, as long ago as 1805, the great difference in death from old age and death from sudden seizure is that "death in age commences at the periphery and ends at the heart,—the empire of death begins at the circumference and ends at the centre; while in sudden seizure death commences at the heart and spreads over the body generally,—death begins at the centre of vitality and gradually extends to its utmost bounds."

Anything which favors the development of arterio-sclerosis precipitates the changes of age. These causes are chiefly alcoholism, syphilis, Bright's disease, diabetes, gout, saturnism, and psychical influences.

Syphilis may enlarge the heart by the direct deposit of gummatous tumors, but more frequently in the processes of arterio-sclerosis. Syphilis ranks next to alcohol in the production of cicatricial myocarditis. This condition soon renders the heart incompetent, and sudden heart-failures, marked by palpitation, dyspnœa, more rarely by cyanosis, oftener by præcordial pain, may immediately precede sudden heart-failure and death. In some of these cases death occurs really suddenly without any previous sign of infection of the heart. More frequently the process is slower, and the first indication of infection is an early exhaustion. In these cases there is usually more or less dyspnœa upon exercise, and œdema may show itself about the feet at night. Syphilis of the heart belongs among the later manifestations of the disease. It may, therefore, show itself in the absence —that is, after the subsidence—of other lesions. But the history of the infection can usually be traced under a searching examination. Thus, sometimes osteophytes are felt upon the legs, or faint cicatrices or pigmentations about the tibia stamp the character of the disease. Sometimes there is evidence of alopecia. Patients complain of pain, sometimes fixed and deep-

seated, in the bones, especially in the bones of the skull, tibia, and ribs. I would not dare to dwell here upon the signs of syphilis. Dilatation of the heart soon supervenes when syphilis attacks the heart, and the cause of the condition is readily revealed so soon as it is suspected; then any doubt is soon dispelled by the efficacy or failure of treatment. One of the most satisfactory cases which I ever had was that of a fashionable lady at a watering-place, who suffered attacks of vertigo and dyspnœa, at first only upon exercise, as in the ball-room, later upon lighter provocation, as after the ingestion of strong coffee or emotional disturbance, and who showed distinctive evidence of dilatation of the heart in a weak and irregular pulse, in œdema of the feet, in association with a few vague physical signs on the part of the heart itself. This patient had wandered wide in the vain search of relief. The case had been properly diagnosticated as a myocarditis by many good men, and digitalis and other heart-stimulants had been regularly administered, but always without any real avail. The request for a remedy for falling of the hair first excited my suspicion of a possible syphilis, and then a slight examination of the history in the right direction soon disclosed the previous existence, many years before, of an eruption, sore throat, ulcers of the tibia, one of which, in fact, existed at the time, with other unmistakable signs of the disease. Under the inunction treatment this patient made a rapid recovery.

The relation of Bright's disease to hypertrophy of the heart is too broad for discussion in the limits of this paper. Besides, the connection is so well known that the feel of a hard pulse in the radial artery refers the practitioner at once, in the absence of valve lesion, to disease of the kidney.

Diabetes produces enlargement of the heart through arterio-sclerosis. Israel found hypertrophy of the left ventricle in ten per cent. of the cases of diabetes, Meyer and Saundby in thirteen per cent. The hypertrophy of the heart was found in connection also with disease of the kidney. Meyer found hypertrophy of the whole heart in twenty-four of ninety cases of diabetes (twenty-seven per cent.) during life.

Gout always affects the heart in time. The older writers never fail to speak of gout of the heart. The heart is affected generally in connection with the kidneys. The hypertrophy of the heart is usually considered a sequel of the cirrhosis of the kidney. The modern view is rather to the effect that the same cause produces both conditions. At least the pathological process in both organs is an expression of interstitial sclerosis. Atheroma of the coronary arteries is very frequent in gout. All the conditions are favored by the fact that they occur in age, which is in itself an important element in the production of arterio-sclerosis.

The influence of saturnism in the production of hypertrophy of the heart is so generally acknowledged as to make it superfluous to cite authors or statistics. In fact, the influence of lead-poisoning throws a strong light upon the chemical character of the toxæmia in alcohol, syphilis, and gout. Saturnism is more frequent than is commonly believed. Sometimes it takes

a cross-examination to disclose it. I was called last month in consultation with a physician and surgeon to give a casting vote as to the necessity or not of opening the abdomen in a case of apparent obstruction of the intestine of five days' duration. The case impressed me as an intestinal paresis. There had been a history of continual constipation and with it some colic, but there was no other sign of lead-poisoning, and there was no lead-line on the gums. I succeeded in discovering the fact that the patient, the foreman of a large establishment, had improvised an ice-cooler with lead-pipe, by coiling it round and round like a coil of rope and filling the centre of the coil with ice. After this discovery the bowels were moved with a good big dose of laxol.

HYPERTROPHY FROM MYOCARDITIS.

Hypertrophy occurs in the same way in the various degenerations of myocarditis, and enlargement of the heart is usually seen in the course of diphtheria, scarlet and typhoid fevers, which are the most frequent causes of myocarditis. Penzoldt speaks of the acute dilatations which occur in this group and which belong in a characteristic and tragic way to diphtheria. Acute dilatations have been observed also in typhus fever, pneumonia, erysipelas, and dysentery. As the heart muscle is rapidly weakened in these affections, the enlargement is chiefly the result of dilatation, but for a time the heart counteracts the weakness of its structure by increase in its volume. Krehl finds from his studies that, as might have been premised, inflamed muscles contract badly. Under defective contraction the ventricle does not empty itself entirely. There is of necessity, as Roy and Adami call it, residual blood in the ventricular chambers. These acute observers found, in fact, in their experiments on the lower animals, that " when they pushed the little finger into the cavity of the ventricle it could be felt that, while the walls of the ventricle in the lower two-thirds up to the apices of the papillary muscles close completely around the finger, there is a clear space in the upper third which is not and cannot be emptied of blood." These observers show, therefore, that hypertrophy is never primary, but is always preceded by dilatation. They thus give the death-blow to concentric hypertrophy. Hypertrophy is always, of necessity, eccentric. It is difficult to keep from straying into the inviting fields of physiology and pathology. I may make the remark that chronic myocarditis is a hypertrophy of the heart.

We return at once to hypertrophies in consequence of nervous influences. Here may be studied first the hypertrophy from mechanical irritation of the vagus, from irritation in the course of the origin of the trunk of the vagus, as from sclerotic changes in the medulla in the course of bulbar affections or irritations of the trunk of the nerve by the pressure of tumors, lymphatic glands, etc., which lead eventually to hypertrophy of the heart. Whatever may be the theory of its origin, Basedow's disease is attended sooner or later by enlargement of the heart. The change in the outlines is

not apparent at first, but ensues after the development of the goitre and exophthalmus and the existence of palpitation for some time. It is noticed then that the heart is enlarged; the dulness reaches to and beyond the right border of the sternum, while the apex is dislocated downward and to the left. The enlargement here, however, is not so much a hypertrophy as a dilatation, which soon sets in, as is evidenced by the paroxysmal attacks of dyspnœa, and more especially of extreme frequency of the pulse, tachycardia, which is when extreme—two hundred and more—now regarded as a sign of acute dilatation. Most cases of Basedow's disease succumb sooner or later to heart failure.

HYPERTROPHY FROM CHEMICAL IRRITATION OF THE VAGUS.

Under this head may be considered the action of alcohol, which has already been studied in connection with the changes in the vascular system and increase of muscular effort, and of tobacco, coffee, tea, and stimulants of this class. Tobacco affects different people in different ways. Most people are poisoned by it at the start. Ordinarily, tolerance is begotten in time and the individual may indulge in the use of tobacco, even to excess, without any symptoms of distress other than occasional nausea. Certain individuals may use tobacco to excess without any perceptible effect upon any organs of the body, but, as a rule, excess is punished in the long run. It is a common experience that an individual may use tobacco throughout the whole period of adolescence and maturity with perfect impunity; then at the age of forty to fifty, all at once may ensue some of the toxic effects of the drug; but if he pass this period without suffering, he may be able to smoke without fear the rest of his days. Certain of these effects which are characteristic are affections of the nervous system of the heart. Tobacco acts in some persons upon the motor and in others upon the sensory apparatus of the heart. Certain individuals are affected with neuralgia of the heart, sometimes so extreme as to simulate a genuine angina pectoris. In other cases only the motor apparatus is affected, and the heart is thrown into palpitation or shows arhythmia or tachycardia. The tobacco neuroses of the heart occur more especially after smoking strong cigars in great number, often after the use of one cigar after another during the whole course of the day. These individuals may then be seized all at once during the night with a neuralgia of the heart or with a severe attack of palpitation. Attacks after chewing tobacco are less frequent, but one such case occurred in the practice of the writer, and the attack, which was the culmination of a series of prodromata, showed itself with such severity when it occurred as to cause the patient to abandon his filthy habit at once and forever. It is said that though other symptoms of tobacco-poisoning may ensue, these attacks of neuralgia and palpitation of the heart never occur after the use of cigarettes.

Coffee is a direct stimulant of the heart. The active principle of it, caffeine, exercises its chief influence on the nerves of the heart. The use

of strong coffee invariably brings on an attack of palpitation in some people, and the excessive use of coffee leads finally to exhaustion and enlargement of the heart. Tea acts in the same way, though it is a milder beverage, and is therefore oftener indulged to excess. Palpitation of the heart belongs among the common symptoms of tea-drinkers' dyspepsia.

HYPERTROPHY IN CONSEQUENCE OF EXCESS IN VENERY.

Excess in venery exhausts the heart both by physical effort and nervous strain. Such excess is most frequently indulged in by young men, and attacks of palpitation and exhaustion, associated in course of time with hypertrophy of the heart, are occasionally observed. These conditions are sometimes seen in young married life, but are more frequent when unnatural stimulus is sought in illegal relations. But the condition is not common. The heart has wonderful reserve force, and recuperates generally under rest. The physician is consulted most frequently perhaps by older men, especially by older men with young wives, or by the habitual *roué* and *débauché*. But coitus reservatus and coitus prolongatus hurt the heart. Women are almost never affected in this way, though the condition has been reported in exceptional cases, especially among prostitutes and sexual perverts. Children or young people of either sex who indulge in masturbation to excess may suffer in the same way. I have seen much more palpitation and præcordial anxiety from this cause and because of the depressing psychical effects.

The vagus nerve slows the heart and may reduce the output as much as thirty per cent. Such a reduction as that leaves blood in the heart. The nervous mechanism of the heart is adjusted with infinite nicety. The heart is made for the body. The capillaries are formed first in the tissues, then come the smaller vessels, next the larger vessels, finally the heart, of the proper size, weight, and capacity, in every way in proper proportion to the wants of the tissues. The tissues signify their wants to the heart.

The heart also has a way of signifying its capacities. It can, through the arterioles, control the calibre of the capillaries, but if these vessels are sclerotic they cannot respond to the heart, consequently so far from assisting in the circulation of the blood by their own resilience they throw extra work upon the heart by resistance. Further, stimulating and inhibitory influences go to the heart from all parts of the nervous system. It is true that there is no tonic like pleasure. In the same way the heart feels the influence of depressing emotions. Balfour speaks of the pathetic manner in which life is every day shortened by the petty troubles, anxieties, and worries which are of daily occurrence, and which by continual inhibition impair the ventricular systole and favor dilatation of the heart. "There are few of us," he says, "who have been in practice for even but a short time who have not had occasion to note the development of serious cardiac symptoms from the trouble arising out of untoward domestic affairs, the worry of an unsuccessful business, or even the wear and tear of a too suc-

cessful business which has outgrown the physical powers of its manager." Leyden distinguishes two stages of this affection of the heart, which is produced *non vi, sed sæpe cadendo*, the stage of erethism and that of organic dilatation.

I have in this simple clinical study laid myself liable to the charge of having confounded hypertrophy and myocarditis. And I have not drawn lines between these conditions. The anatomist does not, and why should the clinician? This leads me to the last word about hypertrophy.

From whatever cause it may occur, hypertrophy of the heart is differently interpreted by the pathologists. Hypertrophy has long been regarded as a physiological process, as an overgrowth which overcomes obstacles. It is always spoken of as a compensatory process, and is regarded with favor by the clinician, who considers the outlook good so long as the hypertrophy is marked, and makes his prognosis bad only when the hypertrophy begins to give way, when the heart muscle suffers degeneration and the heart chambers become dilated. It is certain that it may last for years. Thus, Balfour speaks of an acquaintance with a hale old gentleman, eighty-six years of age, who for sixty-six of these years was known to have suffered with a dilated and hypertrophied heart. Sixty-six years, he said, is certainly the longest period in his experience that mitral regurgitation with hypertrophy has been known or even surmised to exist. We cite for the comfort it gives to patients the statement of Sir Andrew Clark, who knew of six hundred and eighty-four cases of chronic valve-disease, which showed no symptoms of heart-disease for five years. Bean calls this hypertrophy providential; all clinicians call it compensatory.

But this view does not remain undisputed at the present time, at least it does not apply to the peripheral hypertrophies. Thus, certain pathologists of the modern school are not willing to consider hypertrophy as at all a physiological process. It is regarded always as evidence of disease. Krehl, for instance, claims it as certain that hypertrophy of the heart "carries with it in its formation the germ of death, and this fact distinguishes it absolutely from the physiological hypertrophy of the skeletal muscles." Nobody, he says, considers the strong biceps of a gymnast as dangerous, "but what experienced physician would venture to consider an hypertrophied heart healthy, no matter how well it does its work at the time? The great mass of men who have this hypertrophy succumb to insufficiency." Further, he maintains that an author may cite a number of cases of improvement under proper treatment, but none in which the heart symptoms entirely disappear. Krehl always finds anatomical evidence of disease, usually in some of the processes of arterio-sclerosis in the hypertrophied muscles of the heart.

Van Noorden distinguishes the hypertrophy of the heart in diabetes as a welcome complication; for of itself alone it is never the cause of any distressing symptoms. But he recognizes at the same time that the muscular tissue of this hypertrophy shows a greater tendency to subsequent

exhaustion and weakness than does the tissue of the normal heart. Frerichs has shown that heart-failure, entirely independent of coma, is a not infrequent cause of death in diabetes. The final fatal failure follows immediately some unusual exertion or emotion.

So it is certain that a more thorough appreciation of the causes which lead up to hypertrophy of the heart would enable us to recognize the frequency of the condition in its slow insidious development, and by recognizing it earlier would relieve medicine from some of the opprobrium which rests upon it in connection with the frequent reports of sudden death from "heart-failure."

COLLES'S FRACTURE; WITH SOME NEW SUGGESTIONS IN THE TREATMENT.[1]

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COLLES'S fracture is the name given to a transverse fracture of the radius, when it occurs from one-half inch to two and one-half inches above its articulation with the scaphoid and semilunar bones.

At about three-fourths of an inch above this articulation, the cancellous structure of the lower end of the bone, which has the thinnest possible film of compact substance, meets the compact substance of the shaft. Their very unequal density tends to localize the fracture at this place. The first description of this fracture was given by Colles, of Dublin, in 1814. Barton, in 1838, followed with a very accurate description of oblique fracture of the lower end of the radius involving the articulating surface, which fracture bears his name. Colles's fracture is the most common fracture that we meet. It occurs oftenest in middle-aged and elderly people. It is often comminuted or multiple. The shaft of the bone is often split and the styloid process sometimes broken off, or, in young people, the epiphysis may be separated from the shaft. The classic fracture is usually transverse and often impacted. It is usually caused by a fall upon the palm of the hand, but sometimes the traumatism is applied to the back of the hand. The violence is usually indirect, and we have a great diversity of deformity. The periosteum on the posterior surface of the bone is usually not torn. Opinions of eminent authors vary greatly as to the mechanism of this fracture. Believing Chelius's account of this lesion to be the best, I will submit it to you. "The displacement is a triple one; first, backward as regards the antero-posterior diameter of the forearm; second, rotation backward of the

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carpal surface of the transverse diameter of the forearm; third, rotation through the arc of a circle, the centre of which is situated at the ulnar attachment of the triangular ligaments, to the tip of the styloid process of the radius. Thus, in a fall upon the hand, the force is received principally by the ball of the thumb, and passes to the carpus and to the lower end of the radius. If, at the moment of impact, the angle between the axis of the forearm and the ground is less than 60°, the line representing the direction of the force passes upward in front of the axis of the forearm. The whole shock is, therefore, borne by the lower end of the radius, which is broken off, and, the force being continued, the lower fragment is driven backward. Should the angle be greater than 60°, the line of the force passes up the arm, and the result is either a severe sprain at the wrist or a backward dislocation at the elbow. The carpal surface of the radius slopes forward, and, therefore, the posterior surface of the bone receives the greater part of the shock, hence the rotation of the lower fragment backward on the transverse diameter of the forearm. The carpal surface of the radius slopes downward and outward to the radial edge of the arm; therefore the radial edge of the bone receives the principal part of the shock through the ball of the thumb. As a result, the radial edge of the lower fragment is displaced upward to a greater extent than the ulnar edge of the fragment, which remains firmly attached to the ulna by the triangular ligament." By means of this rotary displacement the tips of the two styloid processes come to occupy the same plane, or the radial may even mount above the ulnar. In nearly every case there is some impaction caused by the difference in the structure of the two fragments; only rarely are they so separated as to ride one over the other; but if this does occur, there is an extensive laceration of the ligaments. Some authors claim that the deformity is due to muscular action caused by the contraction of the supinator longus, extensors of the thumb, radial carpal extensors, and the pronator quadratus.

Lecomte and others claim that the fracture is due to the tearing of the bone by strain upon the ligaments of the wrist, and that the deformity is retained by the triangular ligament. The lower epiphysis in the cadaver can be torn from the shaft by forced extension in young subjects. This epiphysis unites with the shaft at about the twentieth year. Its junction with the shaft is represented by a nearly horizontal line, and the epiphysis includes the facet for articulation with the ulna and the point of insertion of the supinator longus muscle. Lecomte's idea has been carried out by many prominent men,—namely, Dr. Gordon, of Belfast; Louis A. Pilcher, of Brooklyn; Duplay, Angier, Trillaux, of France, and P. S. Connor, of Cincinnati. They call it the "cross-breaking strain." All of these theories have been confirmed by experiments made upon the cadaver. It seems to me that there is very little use in trying to demonstrate the cause of a fracture on the cadaver, where the end of the bone is so completely surrounded by strong and tense tendons as is the lower end of the radius, for when the classic fracture occurs the tendons are extremely tense. Dr. F. H. Hamil-

ton's conclusions, from experiments and observations made upon the cadaver, do not wholly confirm those of the others.

Before making an actual study of this fracture on the cadaver, it was very hard for me to fully realize just why we had an abduction of the hand. Previously I had failed to be impressed with two simple, interesting, and necessary anatomical points. First, the fact that nearly the whole articulation of the wrist is between the scaphoid and the semilunar bones of the carpus and the radius of the forearm, the ulna having nothing to do with it (Figs. 1 and 2). Second, that the hand will always be in a straight line

FIG. 1.

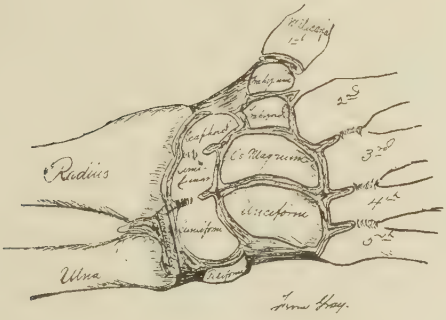
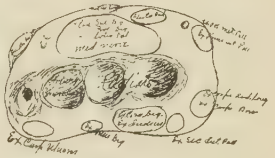
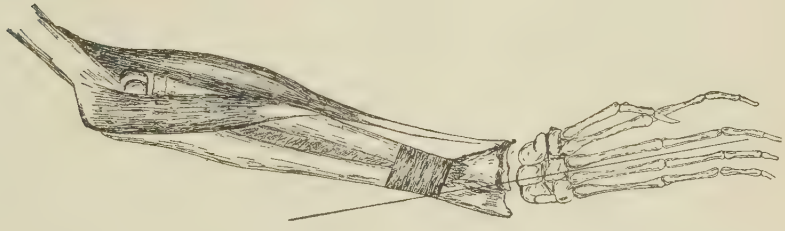


FIG. 2.



with the long axis of the lower fragment (Fig. 3). I have entirely discarded the idea of luxation of the ulna, as I was taught, except in very severe injuries of the wrist. The displacement, or rather depression, of the radius is continued by the action of the supinator longus, pronator radii teres, and

FIG. 3.



pronator quadratus muscles. Dr. E. M. Moore, of Rochester, N. Y., kindly sent me the reprint of a paper from the Transactions of the Medical Society of the State of New York, 1880, written by him, illustrating luxation of the ulna in connection with Colles's fracture. His knowledge was based upon three actual dissections of this fracture soon after death from accompanying fatal injuries, and two cases, illustrated by compound fractures, in which the head of the bone was removed by the saw, and showed very distinctly the detachment of the triangular and internal lateral ligaments from the head and styloid process of the ulna. I have here appended his elucidation of the matter. Dr. Moore says, "The force of the fall may be

just balanced by the strength of the radius; but, in the nature of such accidents, this would not often be the case. In the majority of cases there would be some force still to be borne. Upon what structures does this force fall? The radius, instantly on fracture, ceases to offer resistance, the hand is carried still farther back, and then the strain comes on the structures attached to the end of the ulna. It will be remembered that the ulna does not enter into the formation of the wrist-joint, but there is a distinct synovial cavity between its head and a strong membrane called the triangular fibro-cartilage. This membrane takes its origin from the rim and side of the radius, and, covering the head of the ulna, is inserted into the pit at the root of the styloid process of the ulna. As the hand, with its broken fragment of the radius, is forced backward, the strain is often sufficient to rupture the connection between the two bones or to break the ulna near the head. I have seen this double fracture only twice. The rupture takes place at the weakest point, which is at the insertion of the membrane into the pit at the root of the styloid process. But this is not the only resistance; the styloid process is held to the carpus by the internal lateral ligament of the wrist, which takes a very firm hold upon the end and radial surface of the styloid process. This ligament also gives way, and usually does so in a peculiar manner, by pulling off the surface of the bone, which is weaker than the ligament. Thus, the remaining styloid is brought to an edge like a gouge-chisel and is shortened by about one-half. When these resisting forces are disposed of, the end of the ulna, now laid bare, is pressed against the posterior annular ligament, and is apt to become engaged upon it either by a fold or, what is more likely, by a splitting of its fibres and by a hooking up. If very great violence has been used in the production of these lesions, the head of the ulna will be driven forward through the annular ligament and skin, thus producing a compound luxation."

The diagnosis of Colles's fracture is easy, as a rule. The only conditions simulating it are Barton's fracture, which extends from the articulation,

Fig. 4.

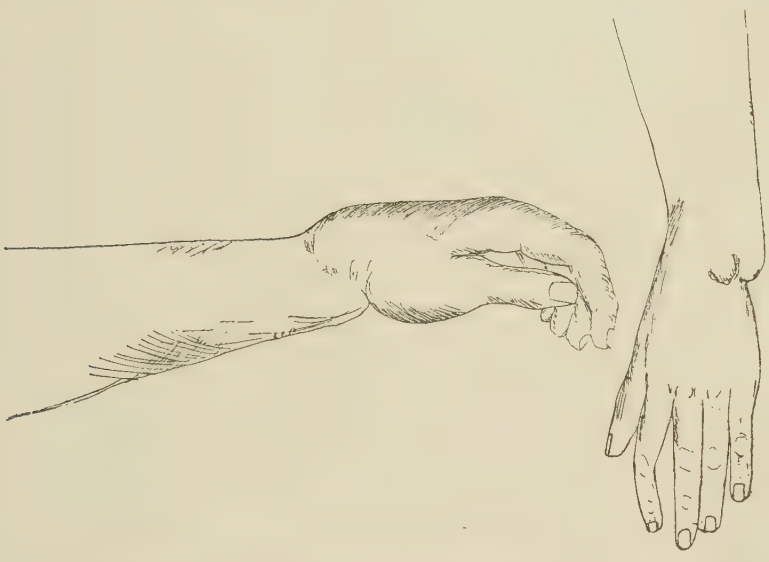
Fig. 5.

Fig. 6.

separating the posterior margin of the articulating surface (Figs. 4, 5, and 6), and dislocation backward of the carpal bones upon the radius and ulna. The characteristic deformity is quite marked, and when we remember the

anatomical lesion in Colles's fracture, the diagnosis becomes very easy. Crepitus and abnormal mobility are often absent, but the prominence on the back of the wrist, causing the "silver fork" deformity, the prominence on the palmar surface of the wrist, corresponding to the lower end of the upper fragment, and the ascent of the styloid process to a higher level, will usually make the conditions plain (Figs. 7 and 8).

FIG. 7. FIG. 8.



The prognosis should always be guarded, for sometimes it is impossible to make a perfect reduction of the fragments. However, when reduction can be made, we can say to our patient that he may expect a useful hand and wrist, but that it is sometimes impossible to obtain a satisfactory result. The prognosis depends upon the reduction of the deformity, to a greater extent than upon any other factor. The fragments are well supplied with blood, and it is seldom, if ever, that they fail to unite. If the fracture is well reduced, ordinary judgment, with simple apparatus in treatment, is all that is necessary to bring about good results.

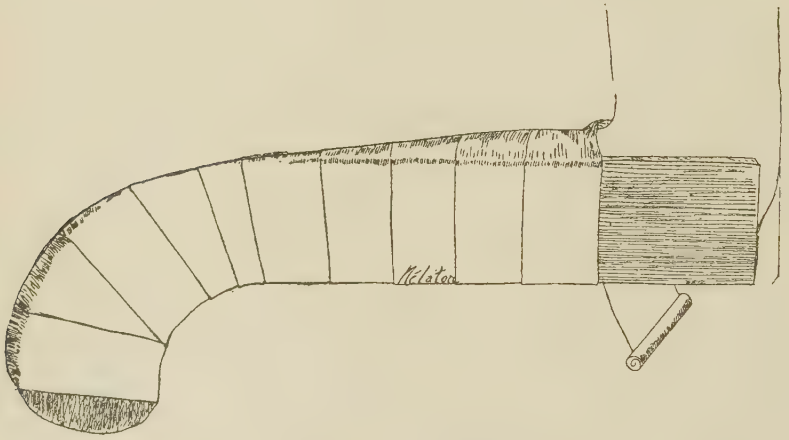
The treatment of this fracture has been largely discussed, and many eminent men have disagreed greatly as to the best means to adopt in treating it; but now I believe that all agree that the proper thing is the reduction of the deformity, followed by any simple form of splint that will hold the fragments in position until union takes place.

Reduction of the deformity is best accomplished by forced backward extension of the wrist towards the radius, and at the same time firmly grasping and manipulating the ends of the two fragments forward and backward in such a manner that they become engaged with each other and are in the normal line. This manipulation relaxes the dorsal strip of periosteum, and allows complete replacement in a moment's time with very slight pain. I

have had occasion to use this method several times, and was surprised to see how completely the reduction was made. However, we sometimes have great difficulty, especially in compound fractures, and we are then obliged to use great extending force under ether, and are sometimes compelled to excise the end of the ulna. Reduction can usually be done without ether, but I would always advise using it if any difficulty is met with, for on the reduction the result largely depends. The two fragments must be brought into line and engaged. The more careful the adjustment the less inflammation you will have to complicate the case.

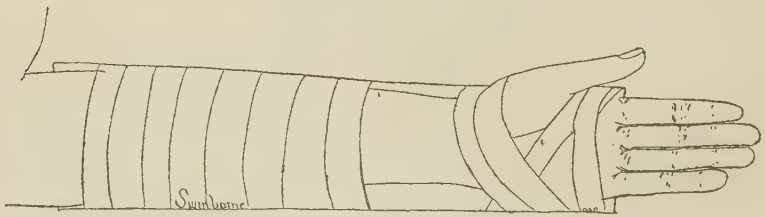
A great variety of splints have been devised for the subsequent treatment of this fracture. They are nearly all long anterior and short posterior splints, with some sort of a fitting on the anterior splint for the palm of the hand. Among the numerous splints devised, Nélaton's pistol-shaped splint

Fig. 9.



(Fig. 9) was used for many years. Swinburne's straight posterior splint (Fig. 10) is, I believe, one of the best of the earlier splints, for it certainly

Fig. 10.



retains the fragments in a position to allow constant observation. Sir Astley Cooper's splint (Fig. 11) consists of an external and an internal piece, between which the hand is allowed to drop over a bandage at the wrist, thus giving some extension. Stephen Smith recommends a slightly pistol-shaped splint (Fig. 12), and by an ingenious arrangement of adhesive plaster allows

the hand to fall between the ends of the splint. It is a reliable dressing. X. C. Scott, of Cleveland, has a method of extension for the treatment of

FIG. 11.

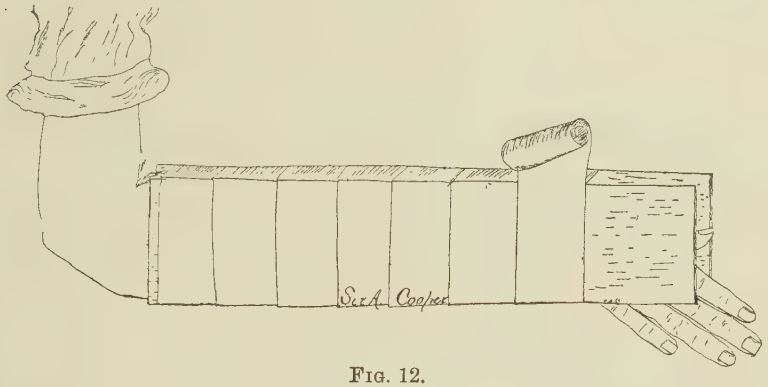
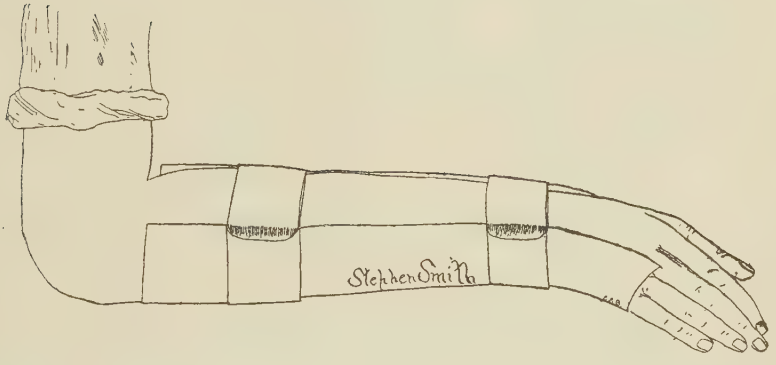


FIG. 12.



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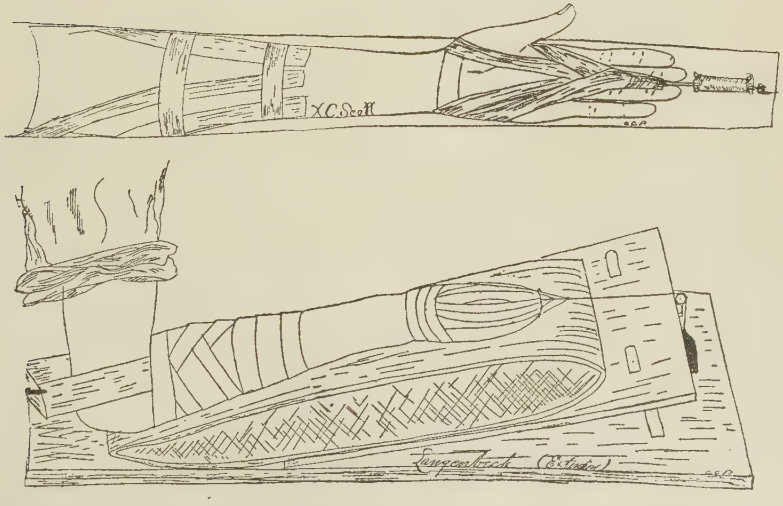
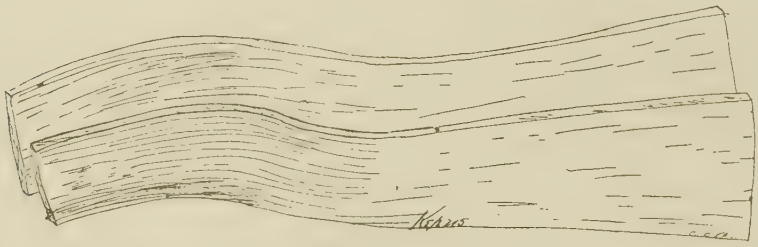


this fracture, which I have seen used with good results. It is very reliable, the only objection to it being the length of the apparatus (Fig. 13). Kerns,

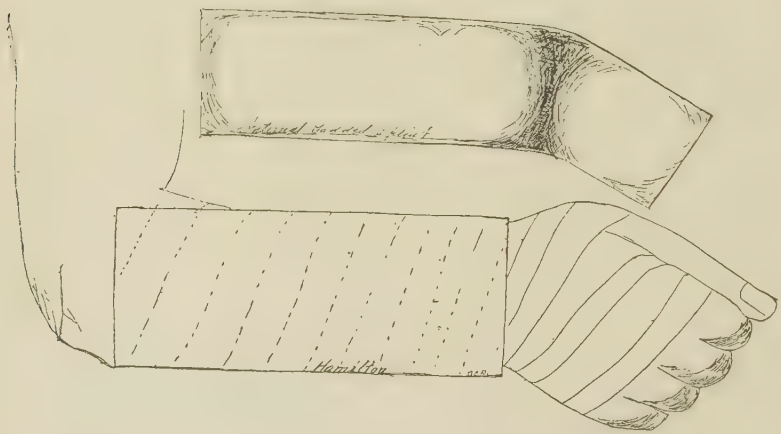
of Pittsburg, makes use of a combined curved splint which gives considerable abduction to the hand. It is a good splint, but it confines the whole hand (Fig. 14). Hamilton's favorite dressing is an internal padded splint,

Fig. 14.



made to fit the palm of the hand and the irregularities of the wrist about the carpal bones. He also uses an external splint reaching to the wrist only (Fig. 15). This is one of the best dressings. Oberest's carved wooden

Fig. 15.

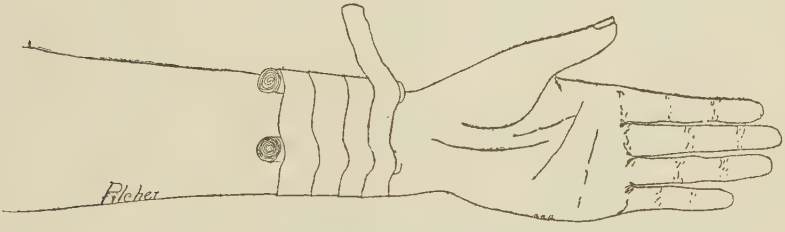


splint, which is really a modification of Bond's, is excellent. Levis's splint and felt splints I cannot recommend, for their lack of stability; but they make a good temporary dressing, and are very handy to carry in the buggy or to use in an emergency. Hay's and Coover's splints are also good ones, but very much like Bond's. Gordon's is a good, substantial splint, I should judge, from its make up, although I have never used it. Anything in the form of a wooden or metal splint should always be a little wider at all points than the hand and the forearm. Bond's splint is more largely used than any other dressing: it is a good one and very reliable. Wyeth uses plaster of Paris (Fig. 16), which can be cut on either side if you wish to remove it often. It makes a good dressing used in this manner. I think plaster should never be applied and retained before the swelling is entirely gone, and you are ready to retain the member until firm ossification has

taken place. Helferich protests against immediate use of plaster of Paris, because it obscures the parts. Dr. Pilcher's modified dressing (Fig. 17)

Fig. 16.

Fig. 17.



consists of two bandages, two and a half inches in width, rolled to the size of the little finger and placed, one on the inner side of the ulna, extending to the carpal bones, the other parallel to it on the outer edge of the radius, over the styloid process; while an assistant holds the fragments in place, these rolls are covered in by continuous wraps of adhesive plaster, one inch wide, from the carpus to the upper end of the rolls. This, certainly, is a very simple dressing, and is said to be a very good one. Dr. Gregory Doyle, of Syracuse, describes an anatomical splint made of plaster of Paris by means of pieces of cloth dipped in plaster cream, formed and bandaged to the normal arm of another person until dry, and then applied to the injured arm. He flexes and abducts the hand slightly. This splint ought to give good results. Dr. Petersen advises simple suspension of the arm in a sling in a position of pronation and ulno-volar flexion (Fig. 18). Dr. Bardeleben thinks this treatment is admissible only for intelligent persons. Dr. Moore's dressing consists of a roll from half to three-fourths of an inch in diameter and two inches long, carefully placed under the ulna, abutting against the pisiform bone. Now, a piece of adhesive plaster of the same width is drawn with as much force as it will bear around the wrist, over the roller, and pinned to prevent relaxation. The distal edge of the plaster is drawn around on a line with the end of the radius. This plaster grasps the broken fragments, and holds them straight and against the ulna. The hand is allowed to hang naturally in a sling which is over the roll and plaster. The weight of the hand and that of the forearm help to press the ulna up into place.

I have no new apparatus or any special kind of dressing to advocate in this paper, and am only emphasizing the preferences already given in speak-

Fig. 18.

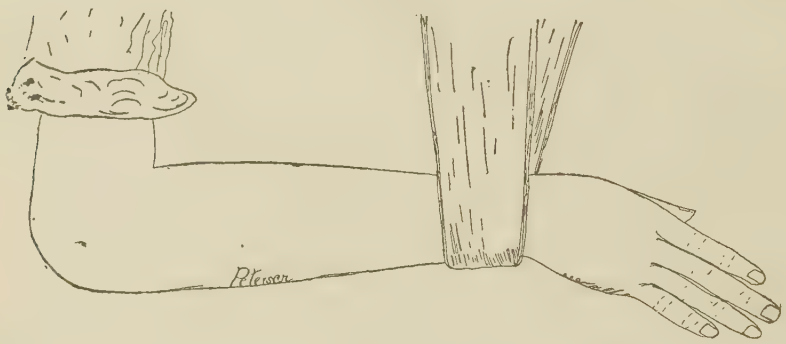


Fig. 19.

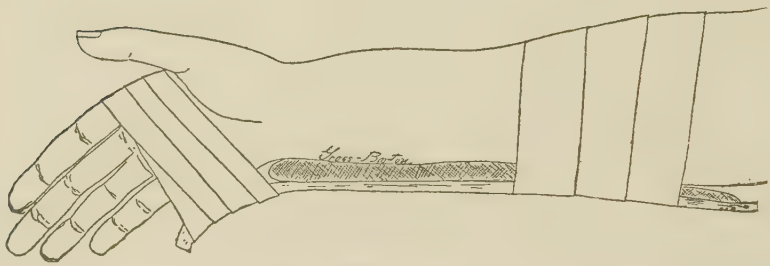
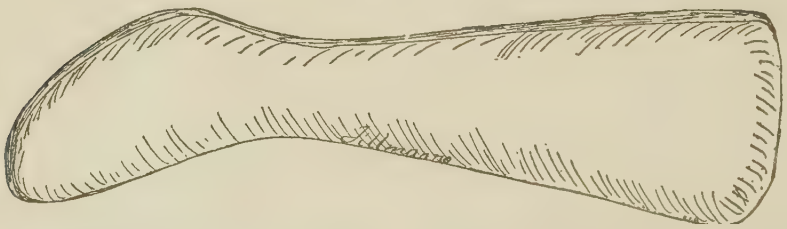


Fig. 20.



ing of the different forms of dressing; but I do wish to advise firm massage during the first week or ten days of treatment, or until we deem it necessary to fix permanently and retain the fragments for ossification,—not only in this particular fracture, but in all fractures accompanied by so much injury to the soft parts, by so much subsequent swelling and inflammation, and by the ultimate danger of the member being partially disabled, painful, or rheumatic. By firm massage I mean firm pressure with the thumbs, well lubricated, over and around the joint which has been injured, once or twice a day, with as little disturbance as possible to the already adjusted fragments. It is perfectly wonderful what this will do for sprained and injured joints. I have used it to very great advantage. It should be applied for one-half hour at a time, with an assistant to keep the broken fragments in place if necessary. The joint also should be moved in all directions after you have given the massage. It stimulates the absorbents to remove the

inflammatory exudate from the joint, and from the tissues in the vicinity of the fracture. It favors the formation of callus, and relieves engorgement and unnecessary inflammation. In this character of injuries there is always more inflammatory action than is necessary for repair. All the books teach us to use massage and passive motion after we have obtained osseous union. By this time there is generally present plastic exudation, which quite frequently arrests the movements of the tendons in their sheaths and the movement of the articulating surfaces. This exudate can, I believe, be nearly all removed by the end of the first week or ten days of treatment by the above method.

After the first ten days we should cease removing the splints every day, and allow the dressing to remain and the fragments to be kept fixed in the proper position. The bandages should be tightened every day for several days, if necessary, by a system of lacing with strong linen thread passed from one side to the other. This will save disturbance of the fragments at a time when it is dangerous to move them. The dressings should be allowed to remain until you are satisfied that firm osseous union has taken place. This may be two or four weeks, making from three to five weeks of treatment. Now, when you come to remove the splints, you will not feel that it is the greatest effort of your life, and tremble with the fear of finding a displaced bone, because you have had ample opportunity to see that the bones were in their proper position before you put on your permanent apparatus. Your patient will have a better result by one-half than he would have had without this form of treatment. In the cases that I have treated in this manner, there was scarcely any stiffness of the fingers or of the wrist when I removed the splint. Your patient should now be instructed to avoid severe use of the member until he himself feels that the injured arm is perfectly solid and sound.

In bad results, Dr. Weir advises osteotomy, followed by extension, and I believe that he is correct. We ought not to have so many bad results in this age of aseptic surgery, when, if necessary, we can at once cut down and adjust, or wire the fragments, if they cannot be reduced. A small scar on the arm is much superior to an unreduced fracture and an almost useless wrist.

BIBLIOGRAPHY.

Frederick Treves, Anatomy.
Gray's Anatomy.
F. H. Hamilton on Fractures and Dislocations.
American Text-Book of Surgery.
Bryant's Surgery.
Ashhurst, International Encyclopædia of Surgery.
P. S. Connor, International Journal of Surgery.
Gregory Doyle, International Journal of Surgery, July, 1894.
Petersen, International Journal of Surgery, September, 1894.
Robert F. Weir, International Journal of Surgery, August, 1894.
King, New York Medical Journal, March 11, 1893.

Helferich, Cent. f. Chir., No. 25, 1892.
E. N. Moore, Medical News, July, 1886.
Gross's System of Surgery.
Sir Astley Cooper's Treatise on Fractures and Dislocations.
Agnew's Surgery.
Hamilton's Principles and Practice of Surgery.
Stimson's Work on Fractures.
Wyeth's System of Surgery.
Tillmanns, Principles of Surgery and Surgical Pathology.
X. C. Scott, Jour. Am. Med. Association.

RIGID OS.

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In treating the subject of rigid os, I shall not consider those cases of anomalous development of the uterus during pregnancy in which there may be a sacciform enlargement of a portion of the wall of the cervix above the uterus. It is sufficient to mention the possibility of this condition being mistaken for rigid os or for a complete occlusion of the os. I shall also throw out of consideration those cases in which a pendulous abdomen allows the fundus of the uterus to fall forward, at the same time carrying the cervix backward possibly beyond the reach of the examining finger. The cases that will receive attention will be only those arising from a non-malignant structural change in the cervix caused by the formation of cicatricial tissue and those of purely functional character.

Cicatricial tissue may exist in the cervix uteri as the result of lacerations in previous labors, as the result of mechanical injury from instruments used in producing an abortion, or as the result of irritating applications. Slow dilatation of the cervix may be due to adhesions between the fœtal membranes and the lower portion of the uterus, or it may exist independently of any diseased condition. The latter statement will be more readily appreciated when we remember how many women have had laceration of the cervix in previous labors without producing stenosis in succeeding labors; when we remember what a large number of multiparous women have had endocervicitis without puerperal orificial stenosis; when we remember that dilatation of the cervix and parturient canal in the primipara is almost always slower than in the multipara, though the majority of these women have never had any injury to the cervix.

The field for our discussion has now been narrowed down to rigid os, dependent upon or independent of organic change.

The differential diagnosis between the two conditions is theoretically quite easy; practically it is quite difficult. In those cases dependent upon

organic change, we may find evidences of previous mechanical injury, or we may obtain a history of endocervicitis. In such cases we may expect much from the mechanical power of the vertical fibres of the uterus. Indeed, we must depend almost wholly upon mechanical force for dilatation of the os in these cases, and the power of the vertical fibres being insufficient, recourse must be had to mechanical assistance by the accoucheur.

Having decided that dilatation of the os is progressing too slowly or not at all, we must consider the remedies that may be used to hasten the dilatation. The remedies that have won the respect of the profession in the past are: chloral (1), wine of antimony (2), opium (3), calomel (4), chloroform (5), and quinine (6). Chloral, in my estimation, stands first on the list. From forty to sixty grains may be given in three hours, by mouth or by the rectum. Chloral allays excessive irritability, permits the patient to sleep or rest between the pains, slightly lessens the erethism of the pelvic organs, and, lulling these to quietude, facilitates the physiological process. Usually, this drug does not interfere with the force or regularity of the true labor-pains, though sometimes it does. The contra-indication to the use of chloral is marked cardiac weakness. In cases thus complicated, its administration should be preceded by a cardiac stimulant tonic. Second stands wine of antimony. This will often relax the teased, irritated, and resisting circular muscle fibres, without diminishing the force of the normal contractions. Compared with chloral it is less soothing to the system, but, at the same time, it is less liable to retard labor. Wine of antimony nauseates, and is objectionable when nausea already exists. Its value does not seem to depend upon its nauseant action, since other nauseants are of little value. Chloroform is often of much value, but, when once its administration is begun, it is difficult to obtain consent to its withdrawal. Before administering chloroform, therefore, I always state to the patient that I shall not continue its use beyond the short time required to observe its influence upon rigidity. This remark paves the way for me to discontinue its use whenever I desire, with less protest upon the part of the patient. I have no fear of its depressant action upon the heart of the parturient. Opium and its combinations are of value. They are of value to the patient exhausted by long-continued fruitless pain. They are of value to the strong woman lashed into desperation by constant, nagging, merciless pains, augmented by the cutting, agonizing, torturing throes depending upon a rheumatic or neuralgic uterus. But opium, in the great majority of cases, will retard labor, and, if an early termination of labor is essential, this property should be considered a contra-indication to its use. Calomel is quite allied to tartar emetic. Quinine is indicated when a stimulant is needed; when the pains are flagging from exhaustion of the patient. There is another remedy —belladonna—mentioned by some French writers. They advise its use by the mouth, by injection into the cervix, or by hypodermic injection of its alkaloid.

Two or three times, quite recently, I have read little paragraphs in

medical journals speaking with the utmost positiveness of the power of atropine to dilate the cervix, when given by injection into the cervical tissues. I have several times applied belladonna ointment to the cervix and have given belladonna by the mouth without beneficial results, but this positiveness led me to distrust my own experience, and made me almost anxious for an opportunity to demonstrate the promised power of the drug. A few weeks ago I had what I regarded as a typical case for its employment,—a case of functional stenosis of the cervix. I introduced a Nott's speculum into the vagina of my patient, wiped away all mucus and blood, pushed the point of the hypodermic needle into the cervix for about one-fourth of an inch, and deposited in the cervical tissues about one-one-hundred-and-twentieth of a grain of sulphate of atropine. I waited an hour, and finding no perceptible dilatation or softening, I injected one-ninetieth of a grain of sulphate of atropine into the parenchyma of the cervix. A little piece of cotton wrapped on the end of a pencil was immediately pressed against the point of puncture to prevent any escape of the solution. At this time the patient said that her throat was quite dry. At the end of an hour the throat was very dry, the face showed well-marked atropine efflorescence, but the cervix was still hard, and two hours afterwards I found it in almost the same condition.

What can be done for the patient by local treatment? Warm vaginal injections may do good and may do harm, by washing away mucus and drying the muciparous glands. Hot sitz-baths are less objectionable. Moist or dry applications to the vulva have some value, but my preference in this line is for a warm rectal injection. At the same time, mechanical dilatation of the cervix may be made. I don't like Barnes's dilators. They are hard to insert and to retain in place. They may burst and drive water between the membranes and placenta and the uterus. You cannot tell whether they tear the womb or not while they dilate. I have a pair of placental forceps whose whole length is twelve inches. They are bent three inches from the distal extremity to form an angle of about forty-five degrees. The distal end of each blade is three-fourths of an inch broad, smooth, flattened, and with round edges. While the patient is in a bath-tub of antiseptic water or while lying in bed, with a quart of warm water in the large intestine, I can, after dilating the os with my finger, introduce the placental forceps into the cervical canal. The bend of the forceps corresponds to the angle formed by the uterus with the vagina. With my right thumb and finger at the proximal end of the forceps I can exert all the pressure that can safely be made, while my left forefinger, passed along by the side of the forceps, can quite accurately measure the tension that is being exerted upon the cervical tissue. I have easily felt the slightest sensation of tearing or snapping of muscular fibres beneath my fingers or transmitted through the metal, and, warned in time, have desisted from that method of dilatation at once. I regard my forceps, carefully used and carefully watched, as the safest method of mechanical dilatation until the cervix will admit my index,

middle, and ring fingers. When further mechanical dilatation is deemed necessary, I place the patient under the influence of chloroform, render the vulva, vagina, and my hand and wrist aseptic, lubricate my hand with aseptic, non-medicated cosmoline, and pass the whole hand through the introitus vaginæ. The fingers, one after the other, can be introduced into the os; then, by closing them into the palm, the mechanical power can be accurately applied and carefully measured. When dilatation has progressed further, the thumb can be carried into the os parallel with the fingers. The greatest circumference of my hand is much less than that of the head that must pass through the vagina, and the circumference of my wrist is not more than one-half of that. When the whole hand is introduced and firmly closed, the os can be dilated to a circumference of ten to twelve inches. In my judgment, the hand is the safest mechanical instrument we can use. It will detect the first sign of laceration; it will never cause the dangerous pressure of a metallic instrument, and it can accurately recognize the presenting part, so that forceps may be properly applied.

In conclusion, I would say, resort to mechanical dilatation only when other means fail.

OBSERVATION OF A CASE OF ARTHRITIS DEFORMANS.

BY A. L. BENEDICT, A.M., M.D.,

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A. B., aged fifty-eight years, single, native-born. The only points of significance in the family history are that both parents had rheumatism, and that an aunt had a disease similar to that of the patient herself. The patient was born on a farm and her early life was a hard one. At the age of thirty she went to Michigan, where she contracted tertian intermittent fever. With this exception she enjoyed better health than usual during the first year of her Western life.

The joint symptoms, or rather the first symptoms that seem to have a direct bearing on her arthritic disease, began at about the end of her first year in Michigan, and they suggest a connection with the malarial fever. About nine in the evening a pain would commence in the insertion of the right deltoid and in the middle of the right biceps, and this pain would last usually till daybreak. Even now, if the arm is held in one position for any length of time, the same pain is felt. Some time after the appearance of the pain in the right shoulder and arm, the index-finger became fixed in a state of flexion, and the three other fingers followed. Within a year from the commencement of the trouble, the condition had reached almost its present degree of deformity, which is as follows: The first phalanx of the index is dislocated forward and dorsally, while the finger as a whole is dislocated towards the ulnar border of the hand, and flexed over the other fingers. The remaining fingers are drawn slightly towards the ulnar border of the hand, and are dislocated somewhat as the index is, but not to as great a degree; they are, however, more fixed. On the outer condyle of the fifth metacarpal bone is a bony nodule, and there is a similar one at the base of the first. The condyles are unusually prominent, being separated

by a distinct groove from the bases of the proximal phalanges. The first intraphalangeal joint of the ring and the middle finger has a play of about sixty degrees, its utmost flexion being a right angle, and it is impossible to flex the corresponding joints much more than this. The movement of the distal interphalangeal joint of the same fingers is slightly limited. The movements of the corresponding joints of the index and the little finger are not much limited, except by their relation to the other fingers. The proximal interphalangeal joints of the second and the little finger are so flexed and subluxated as to leave a very distinct dorsal groove. There is a moderate lessening of sensibility over the entire right hand, due doubtless to the lack of proper use.

Three or four years after the beginning of the pain in the deltoid, the elbow became flexed at a right angle, and about this time the pain ceased. It is an interesting question whether the increasing disability of the limb indirectly caused the pain to cease by removing the opportunity of making such motions as would irritate the nerves, or whether the relief of pain and the extension of ankylosis (false) indicated an atrophic process involving sensory and trophic nerves alike, or whether there was simply a coincidence. It seems altogether likely that the deltoid trouble was not primarily malarial, but that the malarial poison determined the periodicity, according to the old saying that with any other disease " malaria will jump on and ride." The elbow is now movable to the extent of about forty-five degrees, but there is marked crepitus with this motion as well as with attempts at pronation and supination.

At the time the pain in the deltoid and the biceps existed, there was considerable swelling of the feet, and the patient was compelled to use crutches for about three years. The second toe of the right foot is now bent somewhat as the fingers are, but this deformity she ascribes to the use of the crutch and the dragging of the foot. Not much significance can be attached to this particular deformity, as it is not in excess of what might be caused by a badly-fitting shoe. Some time after this there was trouble with the hips, so that the patient was compelled to walk in a stooping posture, resting her hands on her knees. She was not able to continue the use of a crutch, because of the discomfort of its pressure on the axilla and the hand. After walking in the bent posture for three weeks or so she gradually regained the upright position.

In 1862, some three years before the right elbow became stiffened, and after the pain in the shoulder and arm had begun, the neck became fixed, with the head thrown slightly backward and to the left. She could not look sideways at this time, except by turning the whole body. Half an hour after every meal she would have an intense pain in the back, between the shoulders, which would pass away after an hour. The patient used to say that her victuals choked her in the back, and it seems altogether likely that deglutition, which is always more or less painful when the head is put in a strained position, developed a lameness in the pharyngeal and associated muscles. About two years after the stiffness of the neck had begun, the patient made a sudden movement of the head on account of an annoying ache, and felt a sharp crack in the back of the neck, which was also heard by others in the room at some distance, and she immediately found that she could move the head to either side. The lateral motion of the head (rotation) is now limited to forty-five degrees to either side of the median position. It seems that the patient must have ruptured some fibrous band, or cracked off a calcareous nodule that interfered with the rotation of the atlas on the axis. Just where, or of what nature, the obstruction was cannot be stated or even guessed, except that we may imagine it to have been somewhere on the articular surfaces of the arch, and not in close proximity to the spinal cord, where any displaced body would have been apt to cause paralysis if not immediate death. The writer has known of two or three instances in which the snapping of a pleuritic adhesion by some extraordinary muscular effort, with violent

expansion of the chest, has been almost indubitable, and the breaking of some similar obstacle in the neck is certainly conceivable.

Two or three years ago an involvement of the left hand began, although it had ached for some time previously. The first phalanges of the index and of the thumb are now subluxated forward, the heads of the corresponding metacarpal bones being enlarged. By the growth of the condyle of the first phalanx of the middle finger the distal phalanges are inclined towards the ulnar side of the hand. The middle phalanges of the ring and the little finger are dislocated forward so that the condyles of the proximal phalanges, though not enlarged, are prominent. The motion in these two joints is limited to thirty degrees from a right angle. About a year ago the patient first noticed a nodule on the dorsum of the radius, just above the wrist-joint, and on the palmar border of the radial articular cavity. There is slight anæsthesia of the left hand, but not so marked as in the opposite hand. There is considerable pain in the proximal interphalangeal joint of the middle finger where the deflexion is taking place. The other joints of the left upper extremity are normal.

The patient had typhoid pneumonia twenty-five years ago, but she cannot assign it a definite chronological position in the history of the joint involvement. Last winter she had another attack of pneumonia, and some trouble with the hips, which she compares to that which occurred many years ago, though not of as great severity. She has had two attacks of erysipelas, and, three years ago, she was seriously ill with severe pain in the right groin. This may have been some form of inflammation about the appendix. For ten years the patient has suffered with bleeding piles, the hemorrhages occurring once a week. She complains of a peculiar, unpleasant feeling in the back of the neck, as if she wanted to throw off something that was pressing on it. At the same time there is a sort of vertigo, the eyeballs feeling large, and a glimmer of light passing back and forth before her eyes. This ocular symptom passes away if she closes her eyes for a minute. There is also a lameness and soreness extending from the third cervical to the sixth dorsal spine. This area is sensitive to pressure, particularly at the sixth dorsal spine. There is a spot painful on pressure at the right of the spine, below the twelfth rib. The heart and the lungs are normal. The bowels are regular, appetite hearty, digestion good, teeth in fair condition. She has a chronic cough with some slight expectoration, undoubtedly due to a laryngo-trachitis.

The patient died two or three years after the foregoing notes were made, without having made any particular advance or retrogression from the condition described. The lack of examination of the urine, blood, etc., as well as the failure to note treatment, is due to the fact that the patient was seen at her home, many miles from Buffalo, and that the opportunity to watch the case closely was not afforded.

Arthritis deformans may run a course of varying acuteness, though it is never an acute disease in the proper sense of the term. With the exception of the involvement of the left hand, the present case developed in three or four years, and was nearly stationary for twenty-five. There is noticed in many old persons a tendency to nodosities about the smaller joints and to friction in the larger ones. Whether the removal of the disease in the left hand was a senile process or not, it is difficult to say. Certainly no other exciting cause was apparent. A differential diagnosis must be made between this affection and the various forms of rheumatism, gout, arthropathy of tabes dorsalis, acromegaly, the deformities of contracture after paralysis, of

cicatrization, and possibly neoplastic involvement of a joint. In most cases there would be no practical necessity of considering more than one or two of these, and, in the present case, a confusion would have been difficult.

The nature of this disease is obscure. Remak and Benedict, and later Charcot, have considered it to depend on irritability of the spinal cord and the sympathetic system. The urine and the blood have shown no typical lesion. In fact, the writer has been able to gather, in regard to etiology, only that the female sex is predisposed and that there is some depressing physical state. The present patient, a sickly, overworked girl, would naturally be as much inclined towards such trouble as any one, but it is strange that the first symptoms ascribable to this disease should have appeared after what she considered the healthiest year of her life. The possibility of an hereditary tendency is suggested by the history, but the data are not sufficiently established.

Although the theory that arthritis deformans is a necrosis (using the word in a general sense) is the most plausible one yet advanced, it has seemed to the writer that the nutritional and chemical changes which occur in and about the joints in this and in several other diseases with which it is occasionally confounded, indicate some general failure of digestion and assimilation. By this, it is not meant that ordinary gastric functions are disturbed, or that intestinal indigestion or lithæmia are conspicuous, but that there is a lack of the proper elaboration of nutriment after the gross functions of digestion are completed. Whether the liver normally performs this duty, or whether the blood, which contains a glycolytic ferment, adds this to its many functions, or whether the ductless glands are useful in this way, it is impossible even to guess intelligently. There are forms of rheumatism which seem, in a way, to be separate diseases, and to deserve a new nomenclature, while, on the other hand, there is something more than the superficial similarities which the laity recognize, which serves to bind together a number of joint, kidney, and liver lesions, and to suggest a common nutritional etiology.

CHRONIC HYPERTROPHIC CIRRHOSIS OF THE STOMACH.—LYMPHADENOMA.

BY MINOR MORRIS, A.B., M.D.,

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THE writer recently made an autopsy to determine the cause of death in a mechanic, aged fifty-three, of good habits, who had died of obscure abdominal symptoms after an illness of eighteen months.

The clinical history was very meagre; all that could be learned was that there was, probably, an attack of acute gastritis, followed by constant pain, occasional

vomiting of blood, inability to take food, and, finally, death from progressive marasmus.

The patient was well developed, emaciated, the abdomen distended, but no dropsy elsewhere. Upon incision, the abdominal cavity presented a remarkable appearance. About a gallon of clear serous exudate filled the cavity. The abdomen was the seat of recent inflammation, with extensive adhesions, in which were embedded the liver, stomach, spleen, colon, pancreas, and omentum,—which were with difficulty separated. The omentum was a small mass of shrivelled fibrous cords, the liver somewhat enlarged and firm, the spleen atrophied by adhesions, while the stomach seemed to be attached to everything.

The source of this inflammatory process was found in the stomach. This organ was of about normal dimensions, but the wall was enormously increased in thickness to five-eighths of an inch, the various coats being apparently equally affected. The mucous membrane was thrown into great folds, and one gland, standing out prominently, measured one-fourth of an inch in diameter. At three points old oval cicatrices with pigmented outlines marked the site of former ulcerations. The orifices were normally patent, the neighboring glands unaffected, and there were no deposits in the liver.

Microscopically, the process was seen to consist of a round-celled invasion of the glandular structures of the mucosa, which became obliterated by the new fibrous tissue. The invasion was best observed in the muscular coat, where the process was not so far advanced. Here the round cells could be seen swarming in between the muscular bundles, and following them were the new fibrous elements in all stages of development. There was nothing in the examination to suggest carcinoma.

Ziegler is the only writer who has practically anything to say on this disease. His description fits this case precisely. He says, "In advanced cases, the mucous membrane is increased in its entire thickness, and rises in folds and warty or polypous excrescences. The surface becomes rough and corrugated, known as polyposis ventriculi. The hyperplastic fibrous tissue may be dense (as in this case) or soft and cellular. The glands lose their epithelium and disappear. In all forms of chronic inflammation, but especially in the ulcerative, the overgrowth of fibrous tissue may extend to the submucous, muscular, and even to the serous coats. The wall of the stomach thus becomes thickened and indurated, while the muscular fibres are more or less compressed and atrophied."

The pelves of the kidneys contained some pus; amyloid changes were distinctly present. The bladder was contracted and would not have held over two ounces. These were results from an old gonorrhœa, and to what extent they were exciting causes of the gastric disease is only conjectural.

There was nothing to account for the disease except the renal lesions, which can readily be conceived to act as the perpetuating agent of the acute process set up by unknown clinical factors.

Mucous membranes are not the usual seat of these hyperplastic changes, at least to such a degree as occurred here. The spleen and the liver are the organs most frequently invaded, and, as we are at a loss to explain cirrhosis in young subjects and the permanent enlargement of the spleen in

old cases, so we have no hypothesis to explain the fibro-cellular overgrowth in this case.

LYMPHADENOMA.

This case was seen by the author, in consultation, about six weeks prior to death. The man had then been confined to the house about two months, since exposure to a storm in September, making the duration of the entire illness about four months. The first symptom noticed was an enlargement of the cervical glands anteriorly and particularly on the right side. He then had irregular fever with several slight hemorrhages from the bowels, which led his attending physician to suspect typhoid. The temperature ranged from normal to 104° F. The appetite was capricious, but what was taken into the stomach agreed with him. When I saw him, the cervical glands, anteriorly and posteriorly, were enlarged, especially the left submaxillary. The inguinal group was also slightly affected, but no other. The fever varied as before. Three weeks before death the patient began suffering from attacks of intense pain in the epigastrium, which were ascribed to glandular enlargement of a mesenteric group. The diagnosis of lymphadenoma was made, from the variations in the size of the glands, the hemorrhages, and the irregular fever. Death ensued from exhaustion of the vital forces, no complication having arisen. The great pain was found, at the autopsy, to be due, as suspected, to a rapid enlargement of the mesenteric group, involving the nerves by pressure. Further than this, the autopsy disclosed nothing abnormal, except a little increase in hepatic firmness. The spleen was normal in size and consistency. Microscopic examination of the gland tissue confirmed the diagnosis.

Usually there is greater invasion of the lymph structures than occurred here, the mediastinal and retroperitoneal glands, the spleen, and the liver being particularly enlarged.

The cervical group, according to different authors, is the first involved. Their variable size, together with irregular fever, and hemorrhages from the bowel, will make the diagnosis not difficult. The character of the fever, glandular phenomena, and duration will exclude typhoid and syphilis. This is the third authentic case in this city in recent years.

CLINICAL LECTURES.

SENSORY APHASIA.

CLINICAL LECTURE DELIVERED IN PARIS.

BY PROFESSOR DÉJERME.

When, in 1861, Broca established the fact that the function of articulate speech is localized in the third frontal convolution of the left side, there was published at first a number of confirmative observations; but other cases were reported in which, although during life there had existed marked trouble with the spoken language, the convolution of Broca was found intact, and the lesions were seated back of the fissure of Rolando, in the convolution surrounding the fissure of Sylvius,—that is to say, in the customary nomenclature, in the supramarginal gyrus and the first temporal convolution.

It was after the observation of analogous facts that the English physicians, among others Ogle, Popham (1867), Bastian (1869), were led to distinguish two forms of aphasia: one with alteration of the convolution of Broca, in which the patient has more or less lost the faculty of speech, but has preserved the internal speech,—which they designated by the name of ataxic aphasia; the other, with integrity of the convolution of Broca, and in which the internal speech is lost, a form to which they gave the name of amnestic aphasia. They employed the designation of paraphasia for motor aphasia of mild type, in which the patient uses incorrectly one word in the place of another. In 1874, Wernicke opened a new path for the study of the troubles of speech, by demonstrating that ataxic aphasia is the aphasia of Broca, and by describing the sensory aphasia, a form which is accompanied by very marked alterations of speech and writing, and which is due to a lesion in the first temporal convolution. In the great majority of cases of sensory aphasia, the clinical appearance is well marked, and distinct from the cases of motor aphasia.

Observe this man of seventy-six years, a tailor formerly, who has been in my service for three years. He was at Bicêtre, in the division for the aged, when he was brought to me on the 30th of April, 1891, in a comatose condition. After some days, he began to awaken from his torpor, and one was able to determine in him the classical symptoms of sensory aphasia: total word-deafness and word-blindness, marked difficulty of speech, agraphia for all forms of writing except for his name. This man, whom I present

to you to-day, is in a much ameliorated condition, but it is easy to recognize that he is still afflicted with this form of aphasia. As you are able to see for yourselves, there exists a certain degree of word-deafness; he does not understand all the questions which I put to him in a loud voice. The word-blindness, while very much ameliorated, is still far from having disappeared, although he recognizes easily his name, his given name, and that of his daughter, and although he understands quite well certain questions which I put to him in writing, and in which I demand of him if he is a drunkard, if he has been in prison, etc. On the other hand, as soon as I ask him certain things which do not so intimately concern him, one can easily see that he does not understand them, and, like certain cases of aphasia of which Trousseau speaks, he remains sometimes a half-hour with his eyes fixed on the same column of a newspaper of which he is unable to decipher any letter whatever. Nevertheless, this man was quite well educated, he read easily and wrote often.

If the word-deafness and word-blindness are ameliorated in this patient, the disturbances of speech and of writing are the same as at first. He is not in reality aphasic, for he talks a great deal; but he speaks badly and is incomprehensible; he joins words having sense with others which signify nothing, and which he himself coins,—in other words, he is paraphasic, and with him the paraphasia assumes a special form, of which I will speak later. The condition of the writing is easy to study in him, for he has never been hemiplegic, and he employs his right arm for all the ordinary needs of life. As you perceive, when a pen is placed in his hand, he invariably writes his name, and he writes it very badly. It may be spontaneous writing, or from dictation, or from a copy, it matters not, he always traces his name. There is no hemianopsia in this case. Such are the symptoms which the sensory aphasia of Wernicke present, and it is easy to convince you, in studying this patient, that they differ from those which one observes in the cortical motor aphasia, and which we have studied together in a preceding lesson. In order to analyze them more in detail let us return now to these symptoms.

The patient afflicted with sensory aphasia does not understand what is said to him. The spoken language does not awaken in him any idea; it is a series of sounds or of noises without sense,—in other words, there is then word-deafness. Usually this word-deafness is complete; it exists for all words, except for the name of the patient, more rarely for his given name or his profession. In the word-deafness, the patient turns his head towards the side from which he hears his name pronounced. Although at first the sensory aphasia makes the impression that the person is genuinely deaf, it is not so, for it is easy to recognize that the least noise is perceived. But the spoken words have no longer any signification for him, and he finds himself in the situation in which we are placed when in the presence of a stranger who is speaking a language of which we have not the least idea.

Concerning the written language, the sensory aphasiac experiences the

same difficulty as with the spoken language. He is incapable of understanding the signification of written or printed words. In reading, he recognizes only his name, and not always that. The word-deafness and the word-blindness constitute, then, two of the cardinal symptoms of sensory aphasia.

Let us consider now the disturbances of the spoken language. You have seen that in the motor aphasia of Broca the patients do not speak; that they possess scarcely a word, sometimes only an interjection or a syllable, and that it is only after the aphasia has ameliorated—which does not always take place—that they begin to have a larger vocabulary at their disposal. The sensory aphasiac speaks, on the contrary, a great deal; he is loquacious, but his speech is incoherent; he is paraphasic. The paraphasia assumes two forms, which usually coexist. In the true paraphasia, the patient pronounces the words correctly, but they do not correspond to the ideas that he wishes to express. This form rarely exists alone, but more frequently the patient coins new words at the same time, and speaks a sort of jargon which is more or less incomprehensible (jargon aphasia of the English authors).

I have observed only a single example of true paraphasia. It was in one of our *confrères*, a man very distinguished, who was smitten with sensory aphasia at an age quite advanced. When I saw him, eight months after the beginning of the trouble, the word-deafness had almost disappeared, but the patient had remained alexic, agraphic, and paraphasic. The alexia, or, if you prefer it, the word-blindness, was total and accompanied by right lateral homonymous hemianopsia. The patient was able to recognize neither a letter nor a word, not even his own name, and he is the only sensory aphasiac that I have seen who did not recognize his name. He was completely agraphic,—I will return to this symptom presently. With him the true paraphasia existed in the literal sense of the word. He spoke rapidly, and all the words that he employed were well pronounced, and all had a meaning, but they were so combined that the phrases were incomprehensible. Here are some examples, among others, of the replies which he made to my questions:

D.—"Have you tried to write?"

R.—"When I will have shown all the world opposite me, perhaps I would be able to speak myself."

D.—"Have you had some visitors to-day?"

R.—"A little less than the others; it is my superior emission which does not wish it. It is that I am not able to reply that of which I have need."

One day he showed me his urine, and attempted to make me understand that he desired to have it examined. I knew that he had been diabetic formerly, and that he had been cured. I said to him, then,—

"I understand. I will examine your urine."

He replied,—

"It is probable that there will be nothing at all. There is nothing to fear. However, there is to fear that I have been a long time like that, but now there is nothing. However, I would wish to know if this time there is nothing to infinitude. I have suffered to an advanced degree when it happened."

Here the paraphasia was less incomprehensible, and for the ordinary affairs of life, the common forms of politeness, it did not exist. Thus, when, on entering, I said to him, by way of salutation,—

"Good-day, doctor; how are you to-day?"

He replied, and very correctly, with the following phrase:

"Quite well, thank you. Take a chair. How is madame?"

More frequently, as I have just told you, the sensory aphasiac speaks a sort of jargon, formed of words having sense, mixed with coined words, and more or less incomprehensible. It is this condition that we see in our present patient, as you can judge:

D.—"Where were you born?"

R.—"J'ai un mois de jalon, je suis enfant de la, oh, mon Dieu, quel malheur, du canandan, un petit quoi."

D.—"You were born at Isle-Adam?"

R.—"Oui, monsieur."

D.—"What was your father's occupation?"

R.—"Il était beignadan."

D.—"What was yours?"

R.—"Euh, mon Dieu, mon Dieu! Ça ne vient pas bien! diction. C'est un nom comme ça. J'étais conturmerier" (the patient was a tailor), etc.

I could present you other examples of difficulty of speech in the sensory aphasiac, but it seems to me that those which I have given you suffice to show you to what degree the spoken language, in this form of aphasia, differs from that of motor aphasia.

The disturbances shown by the writing are very marked in the sensory aphasiac, and it is easy to study them, for the sensory aphasiac is not hemiplegic, and makes use of his hands as does a man in perfect health. Observe these two specimens of writing; one was made by the physician whose history I have just related, the other by a workman who is tolerably well educated. Both have been able to write correctly only their names. The writing from dictation is null, the copying is very effective, and is executed mechanically. These patients, in reality, copy without understanding, and transcribe the printed letter by the printed letter. Very different in this respect is the agraphia in the cortical motor aphasia, in which the printed letters are copied in script, however altered either the spontaneous writing or that from dictation may be. In sensory aphasia, moreover, it is impossible to obtain from the patients a copy of any great length, and they require a considerable time—half an hour or an hour—to copy a few words. At other times—more rarely, however—the sensory aphasiac writes as he

speaks,—that is to say, he traces the words without connection, and the majority without signification; it is not agraphia, properly speaking, but paragraphia.

Usually the sensory aphasia—like the motor aphasia—appears to follow an attack of apoplexy. Where there are not repeated attacks, the word-deafness improves after some weeks or some months. The word-blindness is likewise not more permanent, and the patient soon understands many of the words that he reads. But the recovery is never complete, and if the aphasiac succeeds in understanding more or less the sense of the questions which are put to him in a loud voice, and by writing, he wearies soon, and there remains always a certain number of phrases which he does not understand. As to the trouble of the speech—paraphasia—and alterations of the writing,—these persist indefinitely. I have observed several of these patients during a period of three or four years; in the case of the man before you, the trouble has lasted more than three years, and I have never seen these disturbances disappear. It is proper to remember, besides, that in this form of aphasia the intelligence is often considerably involved. On the other hand, if the patient has been stricken in early life, the functional substitutions are easy; it is thus that the infantile cerebral hemiplegia does not leave in its train persisting sensory and motor aphasia, even when very extended cortical lesions exist. This is due to the cerebral adaptability, which is considerable at the commencement of life.

The majority of patients afflicted with sensory aphasia have a right lateral homonymous hemianopsia,—that is to say, they do not see in the right half of the visual field. At first the hemianopsia is difficult to establish, since the patient does not understand what is said to him, either by speech or writing. It should be searched for by rapid motion of some object to the right and left of the patient, and notice taken of the moment in which he performs movements of defence, etc.

I will not dwell a longer time on the differential diagnosis between sensory and motor aphasia. You will not be apt to confound a patient who does not speak, or who speaks little, in consequence of a lesion of the convolution of Broca, with a sensory aphasiac who speaks a great deal, but in an unintelligent manner, and in whom the comprehension of the spoken language fails, due to word-deafness. Remember, also, that if the difficulties of spontaneous or of dictated writing are almost the same in both patients, the writing from a copy is entirely different. The sensory aphasiac usually copies very badly, and by designing, letter by letter, the model which he has before him; the cortical motor aphasiac, on the other hand, copies very correctly, and, in transcribing, changes the printed form into script. Likewise, do not forget that the sensory aphasiac, previous to the works of Wernicke, was regarded as a patient afflicted simply with mental confusion,—a mistake which one could not make to-day.

You may have patients afflicted with total aphasia,—that is to say, subjects in whom all the language zone—third frontal, angular gyrus, first

temporal convolution—has been involved at the same time. In these cases the symptoms would be those of sensory aphasia combined with those of motor aphasia. The paraphasia would then fail, and the patient either would not pronounce a word, or would pronounce but a single word and always the same one. In these cases, contrary to that which exists in the sensory aphasiac, you will establish the existence of a right hemiplegia.

How are the effects of the lesions which involve the sensory aphasia to be interpreted?

You know that in right-handed persons—that is to say, in the immense majority of persons—the centres of the different memories which constitute the function of language—the auditory memory of words, the visual memory of words, the motor memory of articulation—are placed in the cortex of the left hemisphere. Likewise in left-handed persons these centres are placed in the right hemisphere. In the first temporal convolution—or in the convolution of Wernicke—and perhaps also in the second, the cortical centre of audition and the centre of the auditory images of words are found. If you understand the sense of the phrases which I pronounce before you in the course of this lecture, it is due to the fact that my speech arouses in you the auditory images of the corresponding words, hence the comprehension of the word, and, therefore, of the idea which it represents.

When the first temporal convolution is destroyed, the comprehension of the spoken word disappears and the patient is afflicted with word-deafness.

The integrity of the auditory images is of first importance in the art of speaking. The convolution of Broca is not in reality automatic; its normal function is dependent on the integrity of the auditory centres for words—the first temporal convolution—which acts as a regulator for it.

When this latter is impaired, the motor images of articulation, although intact, are not able to act regularly, and the patient, although he is able to speak, becomes paraphasic. The demonstration of this fact is due to Wernicke. We now know further—and I believe that I have contributed to establish this fact—that an isolated lesion of the angular gyrus, at the same time that it determines the word-blindness and the agraphia, involves also the function of the convolution of Broca, and determines the troubles of speech.

The word-blindness of sensory aphasia has an explanation not less easy. Remember that we do not read directly, but that we read by arousing our auditory and motor images,—that we read in spelling,—and it is because we read in spelling that the cortical motor aphasia presents, ordinarily, trouble in reading. The destruction of the auditory centre of words suffices to explain to you the alexia in the sensory aphasia, without taking into account that, in a number of cases of this affection, the angular gyrus—centre of visual images of letters and words—is equally involved by the lesion. Now, when these images have disappeared, the printed or

written words are seen as designs which have no further signification whatever.

As regards the hemianopsia which so frequently accompanies the sensory aphasia, it does not depend on the lesion of the angular gyrus, but on the penetration of this lesion into the depth of the brain substance as far as the optic radiations, which are then cut. The hemianopsia in the sensory aphasiac can fail, if the lesion of the angular gyrus does not extend into the tissue.

The sensory aphasia of Wernicke, of which I have just shown you a striking example, does not comprise all the clinical forms possible. There are in reality several forms of sensory aphasia, quite different from one another, which are studied to-day from several different points. In certain cases, the word-deafness being either hardly marked or much ameliorated, there exists only word-blindness with agraphia and some troubles of speech, —paraphasia or motor aphasia of mild form. This patient whom I present to you, and whom I have studied for two years, is a very remarkable example of this form, which I have designated by the term of word-blindness with agraphia and troubles of speech.

He is a workman, aged seventy-three, cultivated, and formerly could speak French and German correctly, could read and write well, as the information given concerning him, and the letters which I possess, written by his hand, bear testimony. On the 31st of December, 1889, he was attacked with giddiness, following which he had some difficulty in speaking, and was able neither to read nor write. He entered Bicêtre in January, 1892, and showed at that time the same symptoms which he presents to-day,—namely, motor aphasia, word-blindness, total agraphia, and traces of word-deafness.

As you can prove for yourselves, word-deafness is scarcely appreciable in this man. You perceive that he understands well the questions which I put to him, but you also perceive that sometimes—and on certain days the phenomenon is more marked than on others—he regards you with the air of a man who does not understand completely what is demanded of him. But, at all events, it is a very mild and inconstant phenomenon in this case.

The speech, on the other hand, is quite seriously disturbed. The number of words at the disposal of this man is limited. It is difficult for him, as you can see, to construct a phrase of moderate length. He stops in order to say, "I cannot, I know well, but I can't say it." Here, consequently, the difficulty of speech is analogous to that which one encounters in the motor aphasia, for this patient is not paraphasic.

The word-blindness with him is complete. Except his name and his given name, which he recognized from the first, he does not understand any word, written or printed. He recognizes, however, a fair number of letters and is able to name them, but the words formed by them have no sense for him. Therefore, in this case, conformably to what one observes

usually, the word-blindness is not accompanied by literal blindness. The examination of the visual field, measured by the perimeter, shows the existence of a right lateral homonymous hemianopsia, with considerable diminution in the remaining halves of the visual field. Finally, in this man there exists neither psychical blindness nor optic aphasia, and the other special senses are intact, as well as the general sensibility.

The difficulty in writing, which is easy to study in this case,—for this patient does not present a trace of hemiplegia of either side of the body,—is very marked, and corresponds to that which one observes when the angular gyrus is destroyed. This patient writes spontaneously his name and his given name—Dubuis Jules—correctly and with a flourish of the pen, as you see. At the sight of this signature, which is so correct, one could not believe at first that this man is agraphic; yet he is so for all words except his name and first name; when he is told to write anything, he traces on the paper illegible characters, veritable pen-tracks, saying, at the same time, "I cannot write." The writing from dictation is the same; it is abolished. As to the copying, it is done in an entirely mechanical manner. This man copies the printed letters as print, drawing line by line very slowly, and stops, without finishing the letter, as soon as the model is withdrawn. See how he has copied the word EDITION, taken from a newspaper! First he has drawn the double outline of each letter, then he has blackened the interspaces, so as to reproduce in black exactly the thickness of each line. This manner of copying, it may be said in passing, is only found in sensory aphasia, for the cortical motor aphasiac never copies mechanically, in drawing from the model, but always changes the printed form into script.

This form of word-blindness with agraphia and difficulty in speech is only a variety of sensory aphasia, and corresponds to a lesion of the angular gyrus, a fact which I have helped to establish. I consider the angular gyrus as the centre of the visual images of words, and the facts reported by Banti, Berkhan, Sérieux, and Souques are confirmative of this opinion. When the angular gyrus is destroyed, or, in other terms, when the visual images of the words have disappeared, there is nothing astonishing in the fact that the patient becomes agraphic, since the act of writing—as Wernicke has pointed out—is only the transcription of the optic images of the letters and words stored up in our brain. Besides, as the angular gyrus forms a part of the zone of language, it is easily understood that its destruction involves not only word-blindness and agraphia, of which I have just spoken, but also disturbance in the spoken language,—paraphasia,—usually mild, or even, as in our patient, motor aphasia.

There exists another form of word-blindness, which I have designated by the name of pure word-blindness with integrity of the spontaneous and dictated writing. Here the word-blindness and the hemianopsia are the same as in the preceding form, but the mode of writing is entirely different. In pure word-blindness, the patient writes spontaneously and at dictation, as

in the normal condition, naturally without being able to read it; but a copy is altered and is made mechanically. The speech and intelligence are intact. This form of pure word-blindness arises, as I have shown, from a special localization, situated outside of the zone of language. Here, in reality, the lesion is situated in the region of the general vision-occipital point,—cuneus, lingual, and fusiform lobules,—involving the fibres uniting the angular gyrus with the general visual centre.

In the normal condition, if one understands what is read, it is because there is no interruption between the retina and the angular gyrus. The impression of a letter reaches, so to speak, the centre of general visual memory as a design. In order that this letter may be understood as a phonetic sign, it is necessary that this centre communicate with the angular gyrus. There the impression of the letter awakens the corresponding visual image, and this letter, in its turn, awakens the idea of the word-auditory and motor images. The pure word-blindness is, in reality, caused by a lesion situated outside of the domain of language. This lesion occupied in one of my patients the point of the occipital lobe, the base of the cuneus, the lingual and fusiform lobules. This man, very intelligent and very cultivated, was afflicted with total word-blindness and with hemianopsia, but there was integrity of the spontaneous and dictated writing. In him there existed also musical blindness, for, although he had been a very good musician before he was afflicted with word-blindness, he had become entirely incapable of deciphering a single note. He had, on the other hand, preserved the reading of figures, likewise the faculty of calculating. The speech, as well as the intelligence, was intact, and there did not exist a trace of word-deafness. Similar cases which presented the same anatomical localization have been reported by Wyllie and Redlich.

Just as there exist two forms of word-blindness, there also exist two forms of word-deafness. One is only the ordinary sensory aphasia, of which I have previously given the symptomatology. The other is what has been described under the name of pure word-deafness, and of which Sérieux has recently reported a very beautiful clinical example. It is quite rare. In this form the patient does not understand the questions asked in a loud voice, and is not able to write from dictation. These are the only symptoms which he presents. He understands writing—it is the only means of entering into communication with him—and replies correctly, in a loud voice, to the questions which are asked of him on paper. The spontaneous writing and copying are normal, and only the writing from dictation is impossible, which is due to the existence of the word-deafness. The intelligence is intact. The anatomical localization of the pure word-deafness is not yet established, but it appears logical to admit that it arises from a lesion separating the general centre of audition from the convolution of Wernicke, or first left temporal convolution (centre of the auditory images of words).

In resuming, we must actually divide the sensory aphasia into two

grand categories, according as the lesion from which it arises is or is not located in the zone of language.

In the first we find,—

1. The classical sensory aphasia of Wernicke, produced by a lesion of the first temporal convolution and of the supramarginal gyrus.

2. Word-blindness either with agraphia or very marked alteration of the writing, arising from a lesion of the angular gyrus. The second category comprises pure word-blindness with integrity of the writing, both spontaneous and from dictation, and pure word-deafness. Here the zone of language is intact.

This fact is demonstrated for pure word-blindness, and it is more than probable that it is the same for pure word-deafness.

REVIEW OF MEDICINE.

MEDICINE.

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The Prophylaxis of Tuberculosis and its Beneficial Results in Germany. (*Berliner klinische Wochenschrift*, May 20, 1895.) By Professor G. Cornet, M.D.

This, the second paper on the prophylaxis of tuberculosis which Cornet has read before the Berliner medicinische Wochenschrift, contains, besides a condensation of much of his former work, the interesting and agreeable statement that the prophylactic measures already adopted by the people of Germany are beginning to have an effect both in lowering the annual mortality from this disease and in lessening the proportion of consumptives to the population at large.

As long as the ubiquity of the bacillus of tuberculosis was held, attempts at prophylaxis were rendered practically useless. The first experiments of Cornet showed, however, that we have in the intraperitoneal inoculation of guinea-pigs a sure means of diagnosing even a minute number of tubercle bacilli in dust. Large quantities of dust collected from fifty thousand litres of air were found by this method to contain no tubercle bacilli. Even in closed rooms, in spite of the presence of consumptives, the bacilli were not found, if the patients were careful of their secretions. Indeed,

they were only found when such secretions were allowed to become dry. Since then these experiments have been abundantly confirmed by other observers.

The parasitic character of the tubercle bacillus is shown: first, under ordinary conditions of nutrition they do not multiply; second, for their culture they require a higher temperature than is usually to be found in nature; and, third, even when the above conditions are supplied, the energetic and quickly-growing saprophytes may destroy the slowly-growing bacilli by using up their nourishing material. An increase of the tubercle bacillus out of the human or animal organism would, therefore, seem to be impossible under ordinary conditions. In consequence of numerous physical experiments the conclusion was reached that the passage of even a strong current of air over moist surfaces containing tubercle bacilli did not cause the bacilli to be taken up into the air,—*i.e.*, their presence could not be demonstrated in the air. Furthermore, the respired air passing from the tuberculous lungs of those affected did not show the presence of the bacilli. From these important and now well-known experiments the conclusion is drawn that the danger of infection rests alone in the secretions or excretions. Even here are further limitations, as shown by over two thousand experiments of the author. The tubercle bacilli cause the first and greatest change at their point of entrance into the body, or in the near-lying lymphatic structures. From pathological studies, by far the most usual points of entry in man are the lungs and bronchial glands. As the bacilli in the fæces are quickly destroyed by the presence of other organisms, we have in sputum, and this when in the dry form, nearly the only cause for the spread of tuberculosis of the lungs. It is also a question how much dried sputum may have to do with other forms of tuberculosis. "At least," says Cornet, "this much remains certain: if it happens that even a certain percentage only of virulent tuberculous sputum can be prevented from reaching a dry state, so with mathematical precision the per cent. of new cases of tuberculosis of the lungs must diminish." Therefore, to prevent the drying of the sputum seems to be the best means of overcoming the spread of tuberculosis. Thus, as to prophylaxis Cornet differs very largely from those who would pass stringent laws to prevent the spread of tuberculosis, such as the prohibition of the marriage of consumptives, in order to avoid the hypothetical inheritance of the disease, strictly enforced isolation, the removing of children from tuberculous parents, and other such severe rules which are impracticable, and would go so deeply into the social conditions of man.

The statement that one-seventh of all persons die from tuberculosis and that one-third of all the world are tuberculous leads to false conclusions. The average length of time of the disease for a grown person is hardly over three years. By the following table it will be seen that between the ages of five and ten years there is only one tuberculous boy among two thousand one hundred and seventy-nine, while between the ages of thirty

and forty years, there is one in ninety-five, and between sixty and seventy years, one in forty-three.

TABLE I. (PRUSSIA, 1891–92.)

Age in Years.	Number of Persons.		Death from all Causes to 10,000 Living Persons.		Death from Tuberculosis to 10,000 Living Persons.			Absolute Number of Living Persons with Tuberculosis.		One Tuberculous Person comes in Contact with	
	Male.	Female.	Male.	Female.	Male.	Female.	Length of Time of Probable Sickness.	Male.	Female.	Male.	Female.
0–1	474,694.5	463,435.0	2,452.2	2,223.9	28.8	23.6	1	1,369.5	1,094.0	347	424
1–2	406,753.0	402,208.0	641.8	617.0	22.5	20.8	1	915.0	835.5	445	481
2–3	396,877.5	392,127.0	276.4	269.7	11.9	12.1	1	472.5	472.5	840	830
3–5	776,998.0	768,751.0	156.4	155.8	6.6	7.8	1	511.0	596.5	1521	1289
5–10	1,726,560.0	1,709,271.5	66.2	68.5	4.6	6.1	1	792.5	1,036.0	2179	1650
10–15	1,647,972.5	1,625,688.5	31.0	36.0	5.3	10.0	2	1,735.0	3,246.0	950	501
15–20	1,503,665.5	1,498,596.0	46.5	41.3	16.7	19.1	3	7,503.0	8,559.0	200	175
20–25	1,234,442.0	1,290,676.5	62.5	57.6	27.9	22.6	3	10,339.5	8,746.5	119	148
25–30	1,143,482 0	1,192,886.0	64.8	64.9	29.4	27.8	3	10,062.0	9,948.0	114	120
30–40	1,909,957.5	1,984,224.5	88.4	84.2	35.3	31.9	3	20,226.0	18,957.0	94	105
40–50	1,478,395.0	1,587,998	146.7	107.5	45.9	31.2	3	20,367.0	14,838.0	73	107
50–60	1,082,834.0	1,210,231.0	253.7	191.2	60.8	39.5	3	19,761.0	14,340.0	55	84
60–70	690,368.5	811,522	505.2	453.0	76.8	53.8	3	15,910.5	13,092.0	43	62
70–80	311,221.5	374,162	1,097.7	1,053.3	54.8	37.7	3	5,116.5	4,236.0	61	88
Over 80	51,864.0	70,641.0	2,435.1	2,292.1	22.2	16.0	3	345.0	339.0	150	208
Unknown	1,577.5	1,898.0	.....	.....	.....	.....	.....	115.426	100,336	.....	.....
Total	14,837,664.6	15,384,316.0	245.3	219.7	28.0	23.9	.....	.....	.....	128.5	153.3

Especial attention has been given to prophylactic measures in the prisons and insane asylums of Prussia. While the time is too short to draw accurate conclusions, still, to encourage those who may be tiring in their efforts without seeing any result, the author has prepared some tables which should certainly encourage all to continue the fight against this great enemy of mankind, when the prophylaxis after all is so simple.

TABLE II.

There died in the prisons from tuberculosis in proportion to 10,000 living.

Prussia.		Bavaria.	
Years.		Years.	
1875, 1876–1877, 1878	118.9	1876–1878	229.1
1878, 1879–1880, 1881	140.8	1879–1881	213.0
1881, 1882–1883, 1884	146.6	1882–1884	158.9
1884, 1885–1886, 1887	174.7	1885–1887	184.1
1887, 1888–1889, 1890	101.0	1888–1890	159.4
1890, 1891–1891, 1892	89.35	1891	153.1
1892, 1893–1893, 1894	81.15	1892	129.5

Prophylactic measures were not taken so early in Bavaria as in Prussia, hence the beneficial results are first seen later.

TABLE III.

There died in the insane asylums in proportion to 10,000 living.

Prussia.			
Year.		Year.	
1880	204.5	1887	180.8
1881	192.1	1888	184.0
1882	189.9	1889	155.3
1883	193.6	1890	152.9
1884	196.4	1891	156.0
1885	195.7	1892	?
1886	198.5		

In Prussia, in the years 1887–1893, about seventy thousand persons less died from tuberculosis than statistics drawn from former years would have led one to suppose. The same good result is seen in Hamburg, but not in other cities of Germany where prophylactic measures were not pushed or taken up but lately. "Where persons do not know how to take take care of themselves, the state must take energetic means to protect others."

Virchow, in discussing the paper, spoke of the indifference of the people at large to this important subject, and remarked upon the great difficulty, ending in failure, which he had when Rector of the Berlin University, in trying to get the students, supposed to come from the best homes of Germany, to use the spittoons, which were placed in convenient places. He then spoke of the danger of drawing conclusions from such statistics, and thought that the favorable results cited by Cornet were more hopeful than was warranted by the present state of affairs.

Polyuria due to Tubercular Peritonitis. (*Southern Medical Record*, May, 1895.) By William S. Gordon, M.D., of Richmond, Va.

The author reports the case of a negro child, aged six, suffering from tubercular peritonitis, who drank from a half gallon to a gallon of water daily and who passed an equal quantity of urine. The analysis of the urine showed the specific gravity to be 1.000, reaction acid, and the absence of albumin, sugar, and phosphates. In this case the abdominal symptoms were not marked until rather late in the course of the disease, and it is interesting to note the occurrence of the polyuria in spite of the absence of these symptoms. It is believed by the author that abdominal disease leads to polyuria by pressure upon the abdominal blood-vessels or by stimulation of the abdominal vaso-constrictor nerves, thus increasing renal blood pressure.

A Contribution to the Study of the Etiology of Membranous Rhinitis. (*Medical News*, May 18 and 25, 1895.) By Mazÿck P. Ravenel, M.D., of Philadelphia.

It is only within the past few years that the disease known as mem-

branous rhinitis, *rhinitis fibrinosa*, has attracted the attention of bacteriologists. The course of the ailment is almost invariably benign, though tending to be chronic, and the constitutional symptoms are very slight. Bacteriological investigation has shown clearly that in the great majority of cases the Klebs-Löffler bacillus is present in the membrane in the nose and in the nasal discharges. The organism found in these cases often possesses a high degree of virulence, and the most virulent cultures have more than once been obtained from patients in whom the general disturbance was very slight or entirely absent. The disease is a form of nasal diphtheria, and a patient is always a possible source of contagion, and should be isolated as carefully as are those affected with the more common types of diphtheria, until cultural methods have proven them to be free from the Klebs-Löffler bacillus. There is, however, a condition clinically identical with membranous rhinitis, in which the Klebs-Löffler bacillus cannot be demonstrated, and which depends upon some other organism. Cases presenting the Klebs-Löffler bacillus, even of a virulent type, seem to lack in infecting power, and this is probably due to the feeble vitality of the organism. When infection does occur, the resulting disease is membranous rhinitis rather than the ordinary forms of diphtheria. Fourteen cases of membranous rhinitis are reported, in all of which bacteriological examination was made. Klebs-Löffler bacilli were found in ten of these cases. Of the four remaining cases, organisms resembling the diphtheria bacillus were found in two; but they failed to answer to one or more of the morphological characteristics of this organism. In one case only a coccus was found on bacteriological examination, and in the fourth case the cultures were not made until there had been involvement of the throat, then, however, Klebs-Löffler bacilli were obtained. The occurrence of a pseudo-diphtheria bacillus was constantly borne in mind, and in every case the organism found was undoubtedly the true Klebs-Löffler bacillus which had in some way become modified in virulence and vitality. A careful review of the literature of the disease results in finding seventy-seven cases. In forty-one of these there is a clear record of bacteriological examination, and in thirty-three the Klebs-Löffler bacillus was found.

The Relation existing between Cholelithiasis and Hepatic Abscess. (*Maryland Medical Journal*, May 25, 1895.) By W. M. Lewis, M.D., of Baltimore.

A patient presented himself for treatment for the relief of pain in the abdomen. There was no icterus and there had been no clay-colored stools; but there was tenderness in the right iliac fossa, which extended up towards the liver, and in the region of the hepatic flexure of the colon there was slight dulness on percussion. About twelve days later hectic manifestations supervened and a tumor was observed in the right hypochondriac region, rapidly increasing in size, the dulness of which merged directly into that of the liver. Abscess of the liver was diagnosed, an operation performed,

and an abscess found immediately over the gall-bladder. This abscess was evacuated, as was the gall-bladder, and a stone was removed from the cystic duct, which presented three facets from which the presence of another stone was suspected but could not be determined at the time of operation. The patient died from shock, and at the autopsy a second abscess was found in the anterior border of the right lobe and the second gall-stone was found occluding the cystic duct. The fluid evacuated from the gall-bladder was muco-serous in character; while a microscopic examination of that from the abscess failed to reveal the presence of amœbæ. The diagnosis of this case was to be made from appendicitis and from typhoid fever. A blood examination excluded the latter diagnosis for there was observed the presence of a marked leucocytosis, a condition not seen in typhoid fever. From appendicitis the distinction was made by the disappearance of pain from the ileo-cæcal region, and by the absence of a tumor. A second case is reported in which a sudden diminution of the amount of urine secreted was attended by symptoms pointing to the diagnosis of cholelithiasis or of peritonitis. Here, again, the presence of slight leucocytosis excluded the latter and made the former more probable. The diagnosis was confirmed later by the occurrence of jaundice and the passage of a clay-colored stool containing a piece of inspissated bile. One lesson to be learned from the study of these cases is the importance of an examination of the blood in obscure cases. A second lesson is the importance to be attached to a sudden decrease in the amount of urine excreted. A third lesson is the necessity for greater care in the examination of the patient with reference to the diagnosis of the disease. Several cases of hepatic abscess have been reported occurring in connection with biliary calculi. The inflammation and ulceration of the biliary passages due to the presence of these concretions are frequently the cause of these abscesses.

Methods of Chest-Examination Supplementary to Auscultation and Percussion. (*Boston Medical and Surgical Journal*, April 11, 1895.) By Edward O. Otis, M.D., of Boston.

Experience, gained in the examination of over fifteen hundred chests of presumably well persons, has demonstrated that the means of determining the condition of the lungs other than auscultation and percussion are exceedingly valuable and add, not inconsiderably, to the knowledge obtained by the latter methods. Moreover, they are applicable to most cases which consult us for suspected lung-trouble. The methods are of especial value in those incipient or suspected cases before we obtain any positive evidence of disease by auscultation and percussion; a class of cases in which any and all means of examination which will lead to a diagnosis should be employed; for the earlier the diagnosis is made and treatment begun the better the prospect of arrest. Further, these methods naturally suggest a valuable means of treatment,—namely, gymnastic exercise especially directed to chest and lung expansion. Spirometry is the measure of the

ordinary amount of air in the lungs. This capacity varies according to age, sex, and stature; according to the height, width, and depth of the chest; according to the mobility of the chest walls; and according as one has or has not been in the habit of fully expanding the lungs. In males between sixteen and forty years of age, for each inch in height the lung capacity is 3.5 cubic inches, or a total lung capacity of 244.44 cubic inches in an individual sixty-eight inches tall. In women of an average age, of nineteen years, for each inch in height the lung capacity is 2.3 cubic inches, or a total lung capacity of 145.3 cubic inches in an individual 63.2 inches tall. With these data, then, knowing the height, we can estimate pretty nearly how much the lung capacity of the individual ought to be. If the lung capacity falls much below the normal on a spirometric test, either the patient's method of inspiration is faulty or his lungs are not normal. If some of the lung tissue is disabled and thrown out of use and the evidence from auscultation and percussion is negative, there will be certain suspicious general symptoms present, and a spirometric test, should it fail to come up to the average by a considerable degree, will confirm one's suspicions as to the integrity of the lung tissue. In patients with incipient pulmonary tuberculosis the lung capacity was found to be much below the average. If there be general symptoms suggestive of tubercular trouble and the vital capacity is found to be up to or above the average, it is a favorable piece of evidence against actual lung invasion. If the diagnosis of the tubercular invasion has been established, the test of the vital capacity is a factor of more or less value in forming a prognosis. Pneumatometry is the measure of the elastic power of the lungs or the strength of the lung tissue. This power may be measured either on inspiration or on expiration. An ordinary steam-gauge made for recording low pressures may be used. There is no constant ratio between the expiratory force and the lung capacity. The value of the test is as a gymnastic exercise. Thoracometry is the measure of the circumference and of the diameters of the chest,—depth and breadth,—both in natural and full inspiration; and includes tracings of the contour of the chest, also in natural and in full inspiration. Two circumferences of the chest are taken; one at the level of the nipples, and the other about two inches below, the "respiratory chest" so-called. These measurements may be taken in extreme inspiration, extreme expiration, and in calm breathing. The important fact to be ascertained is the mobility of the chest walls as a whole. To determine the amount of excursion of the chest wall we measure the antero-posterior and lateral diameters both in repose and in full inspiration. The symmetry or asymmetry of the respiratory movements is told by a simple band of lead with a rubber hinge or by the more complicated and accurate apparatus of Démény, of Paris. The contour of the chest is first taken in repose, and charted; superimposed upon this is the shape of the chest when fully expanded. Taken by themselves, these tests have a very limited value; but the sum total of them gives very valuable evidence. By an examination of

this kind one gets into the habit of looking at the patient physiologically as well as pathologically.

The Influence of Asphyxiated Blood and some Poisons upon the Contractility of the Lymphatic Vessels. (*Le Progrès Médical*, May 18, 1895.) By MM. E. Gley and L. Camus.

These gentlemen have continued their researches upon the lymphatic vessels by the graphic method and have studied the action of asphyxiated blood, of pilocarpine, and of atropine on the thoracic duct and on the receptaculum chyli. A few minutes after the beginning of asphyxia, the thoracic duct and the receptaculum chyli contract and the movements of the latter increase the flow of the lymph, in spite of the slight obstacle interposed by the narrowing of the thoracic duct. Pilocarpine increases the constriction; atropine relaxes the walls of the thoracic duct. These substances act here, as upon the heart and stomach, by the intervention of antagonistic nerves. Pilocarpine stimulates the vaso-constrictor nerves, while atropine paralyzes them, stimulating the dilator fibres. Curare also relaxes the walls of the thoracic duct. The lymphatic circulation ought, therefore, to be influenced as the circulation of the blood by the action of poisons which modify the calibre of the vessels.

Irregular or Atypical Gout,—How shall we know it? (*Journal of the American Medical Association*, June 8, 1895.) By James Tyson, M.D., of Philadelphia.

The writer holds that in the majority of instances of atypical gout a correct diagnosis can be made, and he gives data which will aid in determining the etiological relations of certain ailments to it. These gouty ailments include dyspepsia, headache, follicular inflammation, asthma, bronchitis, tonsillitis and pharyngitis, various skin affections, various psychopathies, and in fact there is scarcely a form of visceral or external pain or functional or organic derangement which has not been by some one or other declared to be gouty in origin. In view of these facts some criteria must be established by which we may judge whether the ailments mentioned, which so evidently arise from many causes, are due to gout or not. If uric-acidæmia can be demonstrated to be present, it is strong presumptive evidence that any one of these events is gouty. This can only be determined by blood analysis. The supervention of an attack of regular gout simultaneously with subsidence of some one of the ailments named is almost conclusive evidence, let the ailment be almost what it may. The history of previous attacks of regular gout must be taken in connection with the absence or presence of other causes capable of producing the same ailment. Hereditary tendency to gout must be similarly considered. The history of exposure to lead-poisoning is important on account of the association of plumbism with gout, or saturnine gout, as it is called, also the history of a habit or mode of life which furnishes the conditions of acquired

gout, and the constant presence of a highly-colored, scanty urine of high specific gravity, with a tendency to lateritious sediments and uric acid gravel. These characteristics of the urine and many symptoms found in gout are also found in lithæmia, but the resemblance stops at the joint affections. In lithæmia there are no tophaceous deposits. The presence of glycosuria in association with gout, or in alternation with it, or in certain members of gouty families, is an undoubted fact, and establishes a very close relation between these two conditions. Finally, here, as in so many other cases, therapeutics come into play as a factor in determining the nature of the ailment. Should such a condition be relieved by the typical treatment for a gouty paroxysm, its gouty nature may be regarded as established.

Systemic Dissemination of Tuberculosis from a Patch of Lupus Vulgaris. (*Medical Review*, May 25, 1895.) By Robert Peter, M.D., of Toledo, Ohio.

The patient was a white man, aged fifty-eight, who had suffered from a patch of lupus vulgaris, situated just below the left ear, for ten years. The patch gradually spread until it destroyed the lobule of the ear and the tissues in front of the auricle. It finally broke through the junction of the aural cartilage and penetrated the anterior temporal vein. The hemorrhage was considerable; but was finally fully controlled, and the patient continued for a year without further change. At the end of that time he had an attack, which was diagnosed typhoid fever, and from which he seemed never to fully recover. His condition passed into one of peevishness, slight hectic fever, colliquative sweats, and emaciation. Then there was developed a synovitis of the knee, with thickening of the condyles of the femur, and later a cold abscess appeared in the renal region, which was evacuated. Both these processes were probably tubercular. Physical examination of the chest did not reveal anything positive. The important lesson taught us by this case is that general tuberculosis can be established by dissemination from a local process of lupus vulgaris, and this lesion should always be designated as tuberculosis of the skin. The author asks the very pertinent question, Is it not probable that the lupus patch was engrafted by inoculation from a contaminated razor? The matter awakens practical interest by the relation it bears to the arguments in favor of requiring barbers to sterilize their razors and sponges.

Primary Cancer of the Gall-Bladder. (*Canadian Practitioner*, May, 1895.) By J. E. Graham, M.R.C.P. (Lond.), of Toronto.

A Welshman, aged forty-five, presented himself for treatment, complaining of bilious attacks brought on by indulgence in certain kinds of food, the prominent symptoms of which were nausea and the vomiting of a deeply-stained material. There was a history of an attack of biliary colic three years previously. The present attack began with pain and

tenderness over the region of the liver, with nausea. Soon the patient noticed a nodule below the liver margin, and following this the liver was noticed to be gradually enlarging and nodules could be felt on its surface. There had been jaundice; but this symptom gradually faded. There was no pain in the stomach. On examination the nodules on the surface of the liver could be felt distinctly and the nodule below the liver margin was very clearly outlined and hard. Over these nodules could be heard distinct, rough, grating, friction-sounds on deep inspiration. These sounds were thought to be due to extensive perihepatitis; but at autopsy there was found to be but a small amount of peritoneal inflammation in the neighborhood of the nodules, and the sound must have been produced by the rubbing of the rough cancerous surface over the roughened peritoneum. The pain over the liver was extreme in a spot where a nodule was rapidly growing, and the development of a new nodule was always preceded by pain. There were 4,140,000 red blood-corpuscles. At autopsy the liver was found to weigh fourteen pounds. The nodules were secondary cancerous masses and the growth occurred by metastasis. The nodule felt below the liver, and which was the first one to develop, was a cancer of the gall-bladder and the primary seat of the disease. Calculi were found in the remains of the gall-bladder, near the cystic duct. Although there were distinct signs of the suppression of the bile-making function of the liver, leucin and tyrosin were not at any time found in the urine. This is probably explained by the limited diet taken by the patient. The diagnosis of primary carcinoma of the liver or gall-bladder was made during life because there was no history pointing to cancerous disease of the pylorus, cæcum, sigmoid flexure, or rectum; because there was a history of biliary colic with inflammation of the biliary passages; and because absence of marked jaundice excluded a primary affection of the biliary passages.

On the Diagnosis of Chronic Disorders of the Stomach. (*Medical Record*, June 1, 1895.) By H. Beck, M.D., of New York.

The wide complex of gastric disorders may be divided into acute and chronic, primary and secondary diseases. Passing over the acute affections, the remaining disorders may be divided into chronic primary and chronic secondary gastric diseases. Only those affections in which the cause of the trouble is to be found in the stomach itself are denominated primary; while as secondary those disorders are indicated in which the cause is located in some distant organ. The first requisite in the proper treatment of stomach disorders is doubtless a correct diagnosis; but a scientific diagnosis of these cases is not an easy thing to make. Before a scientific diagnosis can be given, a physical and chemical examination of the stomach and its contents should be made. For this purpose the stomach-tube should be used, and here lies the difficulty, for patients are not easily induced to submit to a washing of the stomach. In arriving at a correct opinion as to the nature of the case it is necessary to wash the stomach at least three times: first, in its

empty state; second, after a test-breakfast; and third, after a test-dinner. It is necessary to determine whether hyperacidia or anacidia of the gastric juice exists. For this determination a saturated, alcohol-etheric solution of tropeolin and Gunzburg's reagent are used. Microscopic examination of the material removed from the stomach would tell whether or not an inflammatory process were going on. If the contents of the empty stomach are found to be free from hydrochloric acid, pepsin, or mucus, and the reaction is neutral, an anatomical change of the mucous membrane is to be excluded and the ailment is to be considered a symptom of some indirect or nervous influence. The presence of a distinct acid reaction in the contents of the empty stomach is conclusive of gastrorrhœa acida, chronic acid catarrh, or round ventricular ulcer. A distinct alkaline reaction of the contents of the empty stomach is proof of mucous catarrh, atrophic catarrh, or cancer. In all these forms of disease we find, microscopically, inflammatory products in the shape of exudative white globules. The stomach-pump may be used to diagnose the motor condition of the organ and to estimate the size of the organ. The latter estimation is made by a very ingenious method of filling the stomach with water and noting the level to which the water rises in the neck of a glass funnel, which level is marked on the abdominal wall. The water is then drawn off and the lower level is marked on the abdominal wall. This method avoids the artificial lowering of the greater curvature. The Rosenthal pump is the most convenient instrument to use.

A Case of Hypertrophic Pulmonary Osteo-Arthropathy. (*British Medical Journal*, June 8, 1895.) By J. W. Springthorpe, M.D., of Melbourne.

The following train of symptoms was observed in a male patient, aged twenty-one, who presented a gouty and neurotic family history. The man had been perfectly healthy up to the age of ten, when he had an attack of right-sided pleurisy with effusion. This was followed by an attack which the family call typhoid fever, but which was probably an empyema. Later the patient showed some curvature of the spine and a skin disease which was undoubtedly ichthyosis. For the two years previous to the first observation there had been transient swelling of the feet, and this was followed by swelling of the stomach. When admitted to the Melbourne Hospital the right chest was very much flattened and retracted; the liver was enormously enlarged; there was a medium quantity of fluid in the abdomen; and the heart was considerably enlarged and presented a thrill and double murmurs at both the aortic and mitral areas. There was a marked curvature of the spine occupying the whole dorsal region. The sternum was displaced upward and to the left, the left ribs were higher than the right, and the head was carried well over towards the right side. In addition to general wasting, the pectoral muscles, the muscles of the scapulæ and of the upper arms were reduced almost to nothing. The skin over the abdomen,

arms, forearms, hands, thighs, knees, and ankles was thick, scaly, and lividgray in color. The penis was of the size of that of a boy of about ten years of age. The scrotum was large; the cremasteric reflex was present; but there was no history of any erotic excitation at any time. Beneath the thickened epidermis of the legs and thighs was some œdema. There was noticeable enlargement with deformity of the extremities with general lengthening of all the long bones. Both hands were enlarged, being increased in length and not in breadth; the fingers were clubbed. The face presented no abnormalities. At the autopsy no valvular lesion of the heart was found. No thymus gland was noticed. The right pleural sac was one large abscess cavity still containing some pus. The left lung was small, engorged, and friable. The liver was enlarged and lardaceous; the spleen, fibroid and lardaceous; the kidneys, pale; and all the abdominal organs decomposing. The pituitary body appeared normal, and there was no increase in the size of the fossæ at the base of the skull. The disease is rare and is to be distinguished from acromegaly. The sequence of events in this case was as follows: a gouty and neurotic family history; an unrecognized empyema with adherent pericardium; extreme and permanent collapse of the lung, with consecutive dorsal curvature; finally, nutrition and development carried on under the double disadvantage of serious heart-disease and impaired oxygenation of the blood. This rare manifestation of disease may be the result of exceptional abnormality of development under the influence of continued and uncommon maloxygenation of the blood. Such an hypothesis would explain, to some extent, why certain portions of the long bones are especially affected. It explains the extreme clubbing of the fingers, the deformity at the lower ends of the radius, ulna, femur, phalanges, tibia, and fibula, and the changes in the skin.

THERAPEUTICS.

IN CHARGE OF ALEXANDER D. BLACKADER, B.A., M.D.,

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ASSISTED BY

D. J. EVANS, M.D.

Physiological Action of Antidiphtheritic Serum. (*Lo Sperimentale*, April 11, 1895; *British Medical Journal*, May 18, 1895.)

Professor Mya has investigated the physiological action of the serum in the case of four children of varying ages, and suffering from slight ailments. As a result of the injection of the serum no noteworthy action on the circulatory apparatus was observed. No change was produced in the temperature, except in one case in which a scarlatiniform rash appeared. A slight increase in the quantity of the urine was observed, and also in the

amount of urea. The most obvious change was noted in the blood, and consisted in an increase of the white cells and diminution of the number of the red cells, shortly after the injection. The alteration was transitory, not lasting more than twenty-four to forty-eight hours, and was not accompanied by any alteration in the coloring matters of the urine. He does not think that this was due to any direct hæmolytic action of the serum, and is of the opinion that the serum exercises no noxious action which can be appreciated by our present modes of examination.

Arloing (*Lyon Médical*, June 2, 1895) investigated the action of the normal serum of a horse and of antidiphtheritic serum on healthy animals when given by subcutaneous injection. On healthy guinea-pigs, normal serum given daily to the extent of 0.5 cubic centimetre subcutaneously for a period of four weeks, and then increased to 0.75 cubic centimetre daily, and continued for another month, appeared to have a slight but distinctly prejudicial effect on nutrition. In a second batch of young growing guinea-pigs tested for forty-five days with antidiphtheritic serum, there was a sensible retardation of development, the animals tested showing only a gain of 44.5 per cent. in weight during this period as contrasted with a gain of 50 per cent. in the control animals during the same time.

The Therapeutical Value of Cocaine in Whooping-Cough. (*Lancet*, June 8, 1895.) By S. Russell Wells, M.B., and L. Gerard Carré, M.D.

The writers express the opinion that this disease is due to a microbe not as yet certainly determined, which has a local habitat in the respiratory mucous membrane, and that the catarrhal stage of the disease should be regarded as the period of microbic activity, and the whooping stage as due to the after-effect of a poison generated by the microbe. Consequently they consider as the best method of treatment the exhibition during the early stage of some drug which should destroy the microbe and counteract the effect of the poison. This, they think, owing to difficulties in the way of diagnosis and to our lack of knowledge, is for the present impracticable; so they look for a drug to antagonize the effect of the poison in its later stages. This drug should stimulate nerves antagonistic in action to those involved and lessen the sensibility of the peripheral terminations of the afferent nerves from the respiratory and gastric mucous membranes to the medulla. Such a drug they think they find in hydrochlorate of cocaine, which they recommend, not to be applied locally, but to be given internally in doses based on the standard of one grain for an adult three or four times a day. In this way they treated three hundred and twenty-three cases in the out-patient department of the great Ormond Street Hospital for Sick Children. The cases came under observation during the most unfavorable months of the year,—namely, the late autumn and early winter of 1894,—when one would expect the course of the disease to be as long and as unfavorable as it ever is. Under this treatment the average duration of the disease was only three weeks, although severe cases were more protracted.

The child, as a rule, after commencing treatment, showed marked improvement in its general condition, vomiting ceased, anorexia disappeared, the cough became less frequent, and sleep improved. No marked evil effects have been noticed by the writers to follow the use of the drug. Slight relaxation of the bowels appeared in some cases, but this they did not regard as having an untoward effect on the course of the disease. In most cases the children were kept under observation long after the symptoms of pertussis had ceased, so as to enable the observers to speak with certainty of the permanency of the cure.

The Use of Vaccine Serum in the Treatment of Variola. (*Medical News*, June 29, 1895.) By Llewellyn Eliot, M.D.

The writer refers to the experiments of Dr. Sternberg as to the power of blood serum from an immune calf, or from an individual who had recently suffered from variola, if injected into the subcutaneous tissues at the time of vaccination, to prevent the development of a characteristic vaccine vesicle. In these negative results were obtained, nevertheless Dr. Sternberg questions whether at the time a sufficient amount of the serum had been injected. Accordingly, at the request of Dr. Kenyonn, who supplied him with serum from a calf recently vaccinated, but at the time perfectly well, he treated, during the recent epidemic, five cases of small-pox in hospital by this method. Four cases made excellent recovery; one, of very malignant type from the first, died. He gives the details of the cases and thinks, so far as he can judge from such a limited experience, that serum thus prepared modifies the course of the disease, influencing distinctly the character of the eruption, aborting or shortening its usual course, and in many cases preventing pitting.

Dr. E. H. Wilson (*Brooklyn Medical Journal*, July, 1895) also gives a similar experience with three cases treated in the Kingston Avenue Hospital with serum obtained from a healthy calf recently vaccinated. In these cases improvement set in shortly after the use of the serum, and it was thought that the attack had been distinctly modified by the serum treatment.

Argentamin and Argonin. (*Lancet*, July 6, 1895.)

As substitutes for ordinary aqueous solutions of nitrate of silver, two organic compounds have been recently introduced, which are said to have a still greater microbicidal action, and to be less irritating than the nitrate. Argentamin consists of a solution of ten parts of phosphate of silver, with an equal quantity of ethylene diamine, in a hundred parts of water. Thus prepared it neither precipitates albumen nor is it decomposed by sodium chloride. It is said by Dr. Schäffer, of Breslau, to act more energetically than silver nitrate solution of the same strength as a germicide. He found it of value as an injection in gonorrhœa. It has also been used with good results in glandular abscesses; but care must be used lest it produce too

great irritation. Argonin, a combination of silver with caseine, but containing only a fourth of the amount of silver that the nitrate does, is far less irritating to the tissues than argentamin, and, according to Dr. Meyer, of Breslau, has a remarkable microbicidal action, especially on the gonococcus. It is soluble in water, the solution being of a yellowish opalescent color, and gives no precipitate with sodium chloride.

The Effect of Peppermint Inhalation on Experimental Tuberculosis. (*New York Medical Journal*, May 18, 1895.) By Edward R. Baldwin, M.D.

A clinical trial of the peppermint treatment of phthisis, as described by Carasso, has been carried on at the Adirondack Sanitarium, while at the same time experiments under the direction of Dr. Fendeau have been undertaken at the laboratory, with the view of testing (1) the effect of the vapor of peppermint oil upon pure cultures of the tubercle bacillus; and (2) its influence on the course of the disease in animals inoculated *per tracheam* and kept in an atmosphere charged with the vapor. The results obtained appear to warrant the following conclusions: (1) Although oil of peppermint may prevent the bacillus from growing in a test-tube, its growth in an animal is not hindered by even constant inhalation of the strong vapor of peppermint; (2) although the peppermint oil has a high power of diffusion, its local antiseptic action in the respiratory tract is probably slight, both on the tubercle bacillus and on other bacteria.

On Salicin and Salicylates in the Treatment of Psoriasis and some other Skin Affections. (*Lancet*, June 8, 1895.) By H. Radcliffe Crocker, M.D.

The writer in this paper, which formed part of the introduction to a discussion on the internal therapeutics of psoriasis at the annual meeting of the British Dermatological Society, claims a very definite value for this treatment. He thinks that, under the great authority of the German school, attention has been directed too exclusively to mere local treatment in skin diseases. The discovery of the influence of thyroid extract was a startling reminder that the old humoral pathology is perhaps not yet dead, and may live again in a more exact and scientific form. He was first induced to prescribe the salicylates in a case of psoriasis accompanied by symptoms of tonsillitis. The improvement in the appearance of the patches from week to week was very remarkable. Since then he had given the salicylates an extensive trial, with results in many instances equally striking and conclusive, especially in those cases of *psoriasis guttata* of extensive and recent development, the very form unsuited for the exhibition of either thyroid extract or arsenic. Under the influence of the drug he observed a diminution of the hyperæmia, the scales were no longer formed abundantly, while the old crusts became easily detached, leaving a pale-red surface which became smoother from week to week. Should the drug produce any gastro-

intestinal irritation, an aggravation of the psoriasis may result, requiring the administration of an alkaline sedative for a few days, when the salicylates may be resumed in smaller doses. He claims also for the salicylates much success in the treatment of the various forms of erythema multiforme, and also in erythema nodosum, and mentions one case of lupus erythematosus in which striking improvement followed their administration. He sums up a very interesting paper as follows: Salicylate of soda and probably salicin and its derivatives are of great value in psoriasis, especially during the period of active development, and in hyperæmic cases which are unsuitable, as a rule, for both arsenic and thyroid extract. They are useful in all forms of the disease, except, perhaps, in old chronic patches, but their administration must be temporarily stopped if they give rise to any dyspeptic symptoms.

SURGERY.

IN CHARGE OF HENRY R. WHARTON, M.D.,

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Clinical Observations on the Cure of Cancer by Cancer Serum (Erysipelas Serum). (*Deutsche medicinische Wochenschrift*, April 25, 1895.) By Professor Emmerich and Dr. Scholl.

It has been frequently observed by various authors of all nationalities that an intercurrent attack of erysipelas may produce a cure in a cancer or sarcoma, and repeated and accurate observations make this a certain fact. Fehleisen and Weisser injected virulent pure cultures of the cocci of erysipelas into cases of cancer that were hopeless, and produced unquestionably good results. This method, however, was not without danger.

Virulent bouillon cultures of the cocci of erysipelas, either sterilized by raising to a temperature of 100° C. or filtered through a bacterial filter, have been employed by Coley with good results in cases of sarcoma. He found, also, that the addition of a culture of the bacillus prodigiosus to the bouillon, under certain conditions, increased its efficiency. There were, however, some complications and symptoms that were not all that could be desired.

Emmerich, in his experiments, found that the cocci of erysipelas produce certain changes in the blood that cause the destruction of the anthrax bacillus, and so proved that anthrax is curable by the use of serum derived from animals previously infected with erysipelas. The efficiency of serum

therapy has since been established by the work of Mastbaum in swine cholera and of Behring and Kitasato in diphtheria.

The action of all the serum therapies, these authors believe, is similar to that which Emmerich proved in the case of erysipelas and anthrax, and is due to an action of the serum through the blood upon the micro-organisms which produce the disease. These authors would also attribute to the cancer serum a direct analogous action upon the germ or poison that produces cancer. The serum is best produced from sheep that have been inoculated with erysipelas, the serum drawn off, and the cocci removed by an efficient filter.

The authors report in detail six cases, and in all of the cases treated they have seen but two that were not cured; these were suppurative cases that had recurred. If they had been treated earlier, it is thought that the result would have been better.

The authors believe that the cancer serum is a specific in cancer, and probably in sarcoma. They have proved it a specific in all cases, in skin cancer as well as in involved glands. The age rather than the form of the cancer has been of the greatest importance. The earlier the cancer is treated the more certain and more rapid is the healing. The amount of serum injected varies, with the size of the tumor, from fifteen minims to one drachm, and in larger tumors even six drachms may be required, and is injected into different parts of the tumor. There is but slight reaction and little pain, except in large tumors. Fever is generally absent except in cases where large amounts are used, and is then not great, and lasts but a few hours. There have been no untoward accompanying symptoms. The result seen is an aseptic erysipelatous swelling with slight redness. This is never as intense as a true erysipelatous swelling and extends only to a slight distance beyond the tumor. When the injections are discontinued the swelling disappears in from twenty-four to forty-eight hours.

The Possibility of the Disinfection of Wounds. (*Deutsche medicinische Wochenschrift*, No 8, 1895.) By Dr. Haenel.

In his research on this subject the author studied the effect produced by infecting a wound, otherwise aseptic, with matter of known virulence containing streptococci and staphylococci. The tampons were allowed to remain in for times varying from four to eighteen hours; the wound was then washed out with either a three-per-cent. carbolic or a six-per-cent. salt solution; it was then packed with moist packing and covered with a moist dressing, which was changed daily, the wound being washed out each time. Six guinea-pigs of the forty-four used in the experiment were kept as a control and nothing but aseptic gauze was used on the wound. The recovery was very nearly similar in each case. There was not the slightest difference in the course of healing as seen in the wounds treated with carbolic and those treated with common salt solution. If the virulence of the infection was very great the case was acute and death followed rapidly. In

the more chronic cases of suppuration there was no noticeable difference in the intensity of the symptoms or in the length of time required for recovery.

The author believes that his researches support the opinion that a disinfection of living tissues with chemical agents is impossible. The requisites for healing are free drainage for secretions, the holding of the wound wide open, and an outward flow of the osmotic secretions into the dressings.

Total Gastrectomy in a Cat.—At the Société de Biologie, June 1, 1895, Pachon (*Gazette médical de Paris*, June 8, 1895) showed the specimen from a cat in which a total gastrectomy had been performed. In spite of gavage the animal died from inanition three months after the operation. The digestive power was good, but the animal showed a distaste for all food.

The Use of Torsion instead of Ligatures. (*Medical Record*, June 29, 1895.) By John F. Erdmann, M.D., of New York.

This author strongly advocates the use of torsion in checking hemorrhage from divided vessels. He says that by its use we dispose of the ligatures, which act as foreign bodies, and which are very likely to be a source of irritation and also a possible means of infection, and also prevent hemorrhage due to an imperfectly tied knot or slipping of the knot due to the conditions of the ligature. Primary union is more apt to follow by this method and secondary hemorrhage naturally will occur with less frequency.

Limited torsion is done by grasping the bleeding point with an ordinary artery clamp, then drawing the artery out and clearing it for a short distance of all surrounding tissues, then grasping the proximal end of the cleared portions between another pair of forceps, or between the thumb and a finger for a point of limitation to the twisting, and then giving the distal forceps four to eight turns. In unlimited torsion, grasp the bleeding point, and then the proximal portion, without especial care to exclude all of the surrounding tissue in small vessels, and to clear carefully in the larger ones, and give the forceps four to six turns. The entire lumen of the vessel should be occluded, otherwise a portion of the wall only is grasped, and imperfect torsion done, or a portion of the wall is torn off, and in either instance the bleeding continues.

As a result of torsion on vessels the inner and middle coats rupture and an incurvation takes place in the opposite direction of the blood-current and favors the coagulation of the blood, whereas in ligation there is no incurvation, but the inner and middle coats rupture and invert slightly and resemble a V-shaped mass.

The author has used torsion in one hundred and five operations, including thirty-one radical cures for hernias, two explorations of the cranial cavity, eight abdominal sections, eight malignant growths of the breast with axillary dissections, etc.

Tubercular Disease of the Breasts. (*Beiträge zur klinische Chirurgie*, Bd. xiii., Heft 1, 1895.) By Reerink, M.D.

As a sequel to the work done by Maudry (*ibid.*, 1891) the author reports a case of tuberculosis of the mamma that occurred in the Freiburg clinic. The diagnosis was made by histological examination. The etiology of the disease is discussed by the author: he believes that there may be direct infection from without, though this is highly improbable in most cases. There may be extension from surrounding structures, which is probably the more common method, though not in the primary disease, to which class of cases the one under consideration belonged, and to which he had special reference. Where infection from surrounding tissues is excluded, it is probable that the infection can only arise by the hæmatological mode. In cases of localized disease, the author would, after the diagnosis has been made certain, advise an attempt at local extirpation of the diseased area. Where the greater part of the gland is involved he would advise its enucleation and the thorough cleaning out of the axilla.

Rectal Reflexes. (*Matthew's Medical Quarterly*, July, 1895.) By A. B. Cooke, M.D.

The rectum is very abundantly supplied with nerves from the sympathetic system, whose ganglia constitute the chief centres of reflex nerve action. It is also supplied directly from the cerebro-spinal system through the fourth sacral nerve, and the sphincter ani and its contiguous integument receive additional filaments from the pudic, a branch of the sacral plexus. The sphincter ani is the most perfect type of sphincters, and is more richly supplied with nerves than any other muscle in the body. When at rest it is in a state of tonic contraction, and is conspicuous among muscles as being the only one which requires the constant expenditure of nerve force to maintain it in a normal inactive condition. The requisites for reflex acts—an afferent nerve fibre, a transferring centre, an efferent nerve fibre, and a focus of irritation—are furnished in almost ideal form by the rectum and anus, and the reflexes which arise from this locality are the most numerous, the most varied, and the most powerful of which we have any knowledge. The pain which arises from even trivial lesions is out of all proportion to the extent of the disease, and in many cases constitutes the most acute suffering to which humanity is susceptible.

Reflexes are not always pathological evils. They are often invaluable additions to our therapeutic resources. The intimate connection which is maintained between the vital centres and the lower portion of the rectum and its sphincters, through their extensive nerve-supply, is demonstrated at every operation upon these parts. Divulsion, even in profound anæsthesia, unless accomplished with extreme caution and deliberation, invariably produces stertorous respiration, profound modification of heart action, immediate congestion of the cutaneous capillaries, and muscular contraction and rigidity sometimes amounting to opisthotonos. An application of

rectal dilatation to the resuscitation of still-born children has met with complete success in a number of cases. Another field of application for this procedure is its use in the accidents of anæsthesia and narcotic poisoning; asphyxiation and catalepsy form other favorable occasions for its useful exhibition.

The crises in which rectal reflexes have proven themselves effective, and the light and hope which they have incidentally cast upon epilepsy, are sufficient to call for grateful recognition, and inspire a more systematic and exhaustive investigation of the subject.

In a patient, aged twenty-five, operated on for a large mass of hemorhoids, a fleeting but typical convulsion was noticed during divulsion of the sphincter. A history of "nervous spells" since the age of fourteen and of rectal trouble for six to eight years was obtained, and his physician confirmed the diagnosis of epilepsy. At the time of operation the attacks occurred every two or three weeks. During convalescence there was an excessive amount of pain, and upon moving the bowels on the fifth day an acute attack of mania occurred, which lasted for twelve hours, and was characterized by active delirium and periods of great excitement, accompanied by bursts of laughing, crying, and swearing. The result obtained was perfect, and during the eight months since operating the patient has not had a trace of a "nervous spell."

Four Cases of Accidental Swallowing of the Metallic Tube after the Operation of Intubation. (*Journal de clinique et de thérapeutique infantiles,* May 30, 1895.) By G. Variot, M.D.

One of the great dangers following the operation of intubation consists in the difficulty of fixing the metallic tube introduced into the larynx. It sometimes happens that the child, having loosened the tube by some means or other, swallows it. In France the tubes of Ermold are the ones usually employed; for a child of two years the tube being about four centimetres long and a little over one centimetre in the transverse diameter. While they are, fortunately, composed of an inert substance, may they not mechanically do considerable damage if introduced into the intestinal tract? The author believes that, notwithstanding their large size, the tubes may, if the child lives, traverse the digestive tract without giving rise to much inconvenience, and be found in the fæces. If the child dies from the diphtheria, the tube may be found in various parts of the gastro-intestinal canal, but not in the œsophagus. Of the eight hundred and fifty-seven cases of diphtheria treated by Variot in the wards of the Pavillon Bretonneau, one hundred and twenty-two have been intubated. Since the introduction of the vapor-room, in February of the present year, the number of cases in which it was necessary to practise intubation has diminished. Of the four cases in which the tube was accidentally swallowed, two of the children passed the tube, one in two days (age five years, tube 5.6 centimetres long, greatest diameter 1.1 centimetres), and the other in three days (age six years, tube same size as in

last case), while the other two died from the effects of the disease, the tube being found at the autopsy, one (aged two years) in the stomach, and the other (aged twenty-eight months) in the cæcum. In the first case the child died almost immediately afterwards from suffocation, while in the second case the child survived four days, intubation being again practised, followed by tracheotomy. There was slight reddening of the mucosa at the point of contact of the tube with the cæcum, but no ulceration.

Temporary Resection of the Nasal Bones in Operations on the Frontal, Ethmoidal, and Sphenoidal Sinuses and on the Orbital Cavity. (*Wiener klinische Wochenschrift*, May 23, 1895.) By Professor Gussenbauer.

The author describes in detail two cases of malignant growth of the orbit that extended into the ethmoidal, sphenoidal, and frontal sinuses, and produced deviations in the wall of the opposite orbital cavity.

With both the cosmetic and operative ends in view, he devised the following operative procedure, which, while giving ample room for operation, hides the scar as much as possible.

An incision is made in the soft parts, including the periosteum, through the eyebrows, along the supra-orbital margins, passing down on either side of the nose and uniting by a transverse incision over the juncture of the nasal bones and cartilages. An osseous flap is then formed by chiselling through the nasal bones and cartilages, on the line of incision, through the nasal processes of the frontal bones, the lachrymal bones, and the orbital portion of the frontal bones, and finally dividing the ethmoid bone and its connection through the perpendicular plate with the vomer. On turning back this flap with the soft parts overlying it, the tumor was exposed, occupying the ethmoidal sinuses and extending into the frontal sinuses. After its removal the flap with the resected portion of bone was sutured in place by interrupted sutures, drainage having been established by carrying the packing of iodoform gauze into the nares. The patient made a good recovery and the scar was not easily detected.

In the second case the author modified the operation by carrying a single incision down the median line of the nose, separating the nasal bones from each other, resecting them, and thus turning back two flaps, one on either side. This case also made a good recovery, and the method produces as free a field for operation as the first, but the author believes the cosmetic result is not as good, although primary union was obtained and the scar very small.

A Contribution to the Study of Intestinal Occlusion Subsequent to Laparotomies. (*Gaz. hebdomadaire de Méd. et de Chir.*, No. 11, 1895.) By Dr. Adenot, of Lyons.

For some time past there has been much study of this question, and yet

it remains in many respects an unsolved problem. The study by this author has, however, shown where the trouble lies in many cases, and the method of overcoming them.

After a careful discussion of his own studies and observations in post-mortem examinations this author gives as a *résumé* the following conclusions:

1. A certain number of postoperative intestinal occlusions have as their cause a physiological occlusion of the colon at the left subcostal angle. This impermeability is favored by the fibrous character of the suspensory ligament of that angle. It may be also produced by the pressure of the small intestine upon that angle. The downward displacement of the transverse colon also increases the acuteness of the angle.

2. If the small intestine is placed on a plane posterior to the colon after the operation, there is much less danger of its pressing upon this angle and producing the occlusion.

3. Catheterism of the rectum with Fancher's tube may be successful in some cases in reducing the occlusion, either alone or in connection with gases or fluids injected through it.

4. The introduction of the soft tube is not always possible, on account of its doubling up in the cavity of the rectum. The rectal sound should be used with the greatest care, to avoid injuring the mucous membrane.

5. In laparotomies, the knuckles of small intestines that lie in the neighborhood of this particular angle should be displaced, as their presence there threatens to produce compression.

6. It seems preferable to purge the patient gently on the first or by the third day after operation, and not to wait for an exaggerated meteorism, which is of itself a cause of impermeability of the left colic angle.

7. If an occlusion manifests itself after a laparotomy, the abdomen should be opened again immediately. And, besides the other occlusions examined for, that produced in the left subcostal angle of the colon by the causes mentioned above should not be overlooked.

Tracheotomy in Children. (*Birmingham Medical Review*, March, 1895.) By Leonard Gamgee, F.R.C.S.

Twenty-five tracheotomies on children under twelve years of age are discussed in detail. Of this number, twenty-one were operated on for membranous croup or diphtheria, and eleven were cured. Of eight patients two years of age or under, only one recovered, and this one was suffering from a scald of the larynx. Of sixteen operations on children more than two years of age, thirteen were cured.

Quoting from the statistics of Fischer, of Hanover, the writer says that from January, 1884, to September, 1893, there were admitted into the hospital at Hanover fifteen hundred and ten cases of diphtheria, and upon one thousand of these tracheotomy was performed. In 1885, when there was no epidemic of diphtheria or scarlet fever, there was forty-eight per cent. of recoveries. In 1886 and 1887, when there was a severe epidemic of scarlet

fever, the recoveries fell to twenty-seven per cent. These figures show the dependence of the results of tracheotomy for diphtheria upon the type of the disease, proving an increased mortality when an epidemic of scarlet fever or diphtheria exists at the same time. Two other main conditions influence the result of the operation. They are, the existence or not of pneumonia, and the extent to which the symptoms of asphyxia have been allowed to progress. Sufficient indications for operation are well-marked retraction, both costal and episternal, and the fact that the symptoms are increasing in severity despite efficient medical treatment. In regard to the use of chloroform, when the patient is restless and struggling the operator is aided by anæsthesia and the patient is benefited by the relaxation of laryngeal spasm. On the contrary, when the child is cyanosed, quiet, and semiconscious, chloroform is dangerous, and is not indicated. There are a few points in the treatment to which attention may be called. The general rule is that the thyroid isthmus should be drawn down, the deep cervical fascia should be nicked transversely, and the trachea opened above the isthmus. In a young child with a short, fat neck, the writer never hesitates to completely divide the thyroid isthmus down the centre. As a rule, the bleeding is slight, and the method is more rapid, more easy, and gives a much better exposure of the trachea than the method of pulling down the isthmus. If there is time to wait, the trachea should not be opened till bleeding has ceased. A bivalve silver tube with a movable shield, and of as large size as possible, should be used. The pretracheal fascia should be cut through, and the operator should be careful not to strip it from the trachea, as mediastinal emphysema may take place from entrance of air beneath the pretracheal fascia. After operation the patient should be put in a tent near the fire, without using the steam-kettle. An atmosphere laden with moisture is debilitating, and is rarely of benefit to a patient. A full amount of liquid food should be given by the mouth, unless fluids are returned through the tracheotomy-tube, in which case a nasal tube should be used. At the end of a week, or in some cases before, an attempt should be made to leave out the tube. This should be done gradually, so that the child may become accustomed to breathing through the larynx again. In some cases the tube has to be worn for months, or even permanently. One of the chief obstacles to the restoration of natural respiration is fright, caused by the slight obstruction to respiration when the edges of the wound begin to come together, and which may produce a spasm of the constrictor muscles of the larynx. It is best overcome by using a tube with an opening on its convexity, which may be plugged, at intervals, for some minutes at a time. Granulations may form at the junction of the trachea and larynx. They should be prevented by using a well-fitting tube and by leaving it out as soon as possible. They hosuld be cured by touching them with silver nitrate. Stenosis of the larynx may vary from a partial adhesion of the cords to complete blocking of the larynx from a cicatricial mass. The laryngeal muscles may be temporarily paralyzed by disease, or there may be diphtheritic paralysis, which

is more prone to affect the abductors of the cords than the adductors, and so produce dyspnœa.

The Treatment of Elbow-Joint Fractures in the Position of Acute Flexion, without Splints. (*Boston Medical and Surgical Journal*, July 4, 1895.) By H. L. Smith, M.D.

The term "acute flexion," as used in this paper, means something entirely different from the same expression as employed in the past. It contemplates a flexion of the forearm carried to its limit, and applied to every variety of fracture involving the joint region, save only that of the olecranon process.

Any apparatus which holds the forearm flexed fills every requirement, for as long as acute flexion is maintained, the fragments being moulded into position, the interlocking bones act upon each other mutually as the very best form of splint. A broad ribbon of adhesive plaster is applied as a double figure-of-8 near the wrist, and as high as possible on the arm. The whole arm is then supported loosely in a sling, or is suspended from the neck by means of a bandage fastened to the wrist. By this form of dressing the whole elbow region is left perfectly free from pressure and open for inspection. This method can be employed with safety, as there is no embarrassment to the circulation and no real pain nor discomfort.

The acute flexion is maintained for a period of time varying from three to five or six weeks. The writer believes that good and rapid results are obtained if no motion whatever nor change in position is permitted for at least four and perhaps five or even six weeks.

From the evidence of experimental fractures and the results of clinical experience, the writer believes the following propositions justified:

1. All fractures of the lower end of the humerus, once in position, are held in place if the forearm is kept acutely flexed.

2. Such flexion can be used without danger to the limb or undue distress to the patient.

3. The only force required being one of flexion, no rigid apparatus is needed, it being sufficient to strap the forearm to the arm.

4. The only points to emphasize are: Be sure to replace fragments as flexion is made, taking great care that the internal condyle is as low as possible and the joint not widened by effusion between fragments. If the condyle is kept down, no gunstock deformity can occur.

5. In the cases thus far treated the amount of motion gained has been slightly greater than after ordinary methods. The amount of deformity has been very much less.

NEUROLOGY.

IN CHARGE OF LANDON CARTER GRAY, M.D.,
New York City,

GUY HINSDALE, M.D., Philadelphia, AND WILLIAM BROADDUS PRITCHARD, M.D., New York City.

Note on Heavy Brains. (*Lancet*, June 15, 1895.) By J. A. Campbell, M.D., F.R.S. (Edin.).

At Garland's Asylum, Carlisle, a post-mortem examination has been made in the case of each death, except two, which has occurred since January 1, 1867, and the weights of the viscera have been uniformly recorded. Of the fifteen brains weighing over sixty ounces, the diagnoses were: Mania, six cases; epileptic mania, two cases; epileptic dementia, three cases; dementia, two cases; general paralysis and melancholia, each one case. The heaviest brain, seventy-one and a half ounces, occurred in a case of epileptic dementia.

Melancholia cured by Intranasal Operation. (*Transactions of the American Laryngological Association*, 1895.) By F. H. Bosworth, M.D.

A man, aged forty-two years, who suffered from depressive melancholia, at first periodic, but later constant, became unfitted for business. He complained of the eyeballs feeling as if too large for the sockets, and of a bursting pain between the eyes. He had at different times been operated on for varicocele, stricture, ligation of the pudic artery, removal of the testicles, and hemorrhoids. He had worn glasses, had his eye-muscles cut, and one eye enucleated. He had been circumcised, had his spine cauterized, and worn a seton in his neck. Examination of the nose showed the right nostril nearly occluded by a thickened bulging of the cartilaginous septum and the left middle turbinate thickened, with myxomatous degeneration, and evidences of ethmoid disease. The nostrils were freed with saw and snare, and all symptoms quickly disappeared. The man has since remained perfectly well.

Structural Changes in Alcoholic Insanity. (*Brain*, winter number, 1895, and *Medical News*, July 13, 1895.) By Lloyd Andriezen, M.D.

The results of the author's investigations are that the neurons showed changes in the cell-bodies and in the nuclei. There were swelling and indistinct staining of the intercellular chromatin rods. There were also coarseness and increased staining of the nucleus, changes that indicate that in alcoholic insanity the cell-protoplasm and cell-nuclei are the seat of serious nutritive disturbances. Especially, however, did Andriezen note alteration and destruction of the fine naked collaterals and nerve terminals of the molecular layers of the cortex,—the very layer in which afferent impressions are first communicated to the nerve-cells of the cortex. There

were also swelling and softening of the very minute protoplasmic granules attached to the special processes in the superficial quarter of the cortex. These changes, "dynamical changes," as Andriezen calls them, doubtless explain the diminished sensitiveness and alertness of the alcoholic to incoming sensory impressions, and similarly a diminution of the spread of the excitation from one area to associated areas. To these changes and to the changes in the cell body are also to be relegated the amnesia of the alcoholic state. We have here the first instance in the history of insanity in which it has been possible to correlate closely cause, structural change, and symptom.

Treatment of Cerebral Syphilis. (*New York Medical Journal*, July 13, 1895.) By L. Steiglitz, M.D.

The author says that unless a special contra-indication exists it is best to combine mercurial inunctions (three to five grains) with the administration of iodide of potassium or sodium in doses of three hundred to four hundred grains a day, which are very well borne by most patients; in fact, the large doses often create less disturbance than small ones, according to my experience. If syphilis of the brain is suspected in a given case and a tentative course of specific treatment is decided upon, the latter must not consist in the administration of small doses of iodide of potassium. Cases of brain syphilis get worse under fifty grains of iodide of potassium a day, but respond promptly to treatment as soon as mercurial inunctions and three hundred grains of iodide of potassium a day are ordered. In such a case, therefore, the tentative treatment should be just as vigorous as though the diagnosis of syphilis were well established; if no improvement at all occurs within four weeks, none is liable to occur from further specific treatment.

Intracranial Neurectomy. (*Medical News*, April 27, 1895.) By R. W. Stewart, M.D., M.R.C.S.

The patient was a woman, aged forty-four years, who suffered from painful tic, which followed an attack of influenza four years previously. The pain was paroxysmal and occasioned by the slightest irritation, such as eating, drinking, talking, a blast of cold air, or the slightest touch. Teeth had been extracted without benefit. The patient was much depressed.

The Gasserian ganglion was reached by Hartley's method. The anterior branch of the middle meningeal artery was accidentally ruptured at two places, but secured by ligatures. The ganglion was broken up by a dental excavator. Recovery from the operation was rapid, and no pain had been experienced six weeks after the operation.

A Fatal Case of Excision of the Gasserian Ganglion. (*Medical Record*, June 29, 1895.) By Arpad G. Gerster, M.D.

The patient was a man who for nine years had suffered from infra-orbital neuralgia. Carnochan's operation had been performed twice with tempo-

rary relief. Dr. Gerster performed Hartley's operation. In liberating the inframaxillary branch of the nerve, suddenly profuse venous hemorrhage was encountered. This was controlled by packing, and three days later the operation was completed. Death followed one week later, and a focus of softening was found at the deepest portion of the wound cavity of the size of an English walnut, involving the cortex. The definition of this focus from the healthy brain was very sharp.

An Atypical Case of Insular Sclerosis. (*New York Medical Journal*, May 25, 1895.) By Theodore Diller, M.D., of Pittsburg.

A male patient, age twenty-one years, had been variously occupied in factories where he was more or less exposed to the fumes of lead, silver, nickel, and mercury. At the age of fifteen a tremor appeared in his hands which was apparent upon emotion or on attempts at fine movements. Four years later tremors appeared in the feet, and now, during emotion, are noticed in the face and tongue. This tremor is coarser than that of paralysis agitans. For the past six months the patient has had a decided tendency to protrude the head forward and to the right in walking. The patient has gradually become emaciated and he has grown weaker. The gait is spastic; both knee-jerks are somewhat exaggerated; ankle clonus is present; speech is halting; the mental processes are slow, and there is apparently some enfeeblement of the intellect. The eyes are somewhat protruded; pupils are dilated; there is slight internal squint; no nystagmus; the vision and the visual fields are abnormal, but there are no gross changes in the fundus of either eye. The case is diagnosed insular sclerosis from the presence of the general weakness and emaciation; the clumsy, shuffling, spastic gait, the exaggerated reflexes, the presence of ankle clonus, the protrusion of the eyeballs, the internal squint, the slight speech affection, and the mental impairment. The nature of the tremor, the age, and the whole attitude of the patient throw out paralytic dementia and paralysis agitans, nor does it seem possible that the disease could be Friedreich's ataxia or Graves's disease. The only affection presenting real difficulties in the way of diagnosis is metallic poisoning. The exhibition of the symptoms, however, would decide against this.

Cerebral Tumor in a Child of Eight Years. (*Medical Age*, May 25, 1895.) By J. Williams, Jr., M.D., of Adrian, Michigan.

A boy, aged eight years, came under observation suffering from strabismus and left-sided motor paralysis. The squint had been present for three weeks, but the paralysis occurred suddenly the day before examination, after a fall. The paralysis was not complete, there being some movement in the arm and in the leg, and the face was not involved. Sensation was normal over the entire body, patellar reflexes and ankle clonus unaffected. The skin had a peculiar, hot, burning feeling. The child was rather precocious, but his words were prolonged and there was a slight deafness in

the left ear. There was no nausea, no vomiting, and no pain, and the muscles did not show the reactions of degeneration. The patient remained in this condition for about eight weeks; on the ninth week vomiting commenced with obstinate constipation and attacks of occipital headache lasting several hours. The urine was always normal. The temperature ranged between 99.5° and 100.4° F. The child died of exhaustion sixteen weeks after the occurrence of the paralysis. Post-mortem examination revealed a small, hard nodule, encapsulated by a tumor of semisolid nature, one and one-half inches in diameter, situated in the substance of the left hemisphere at the beginning of the crus. This growth was surrounded by a yellow, creamy fluid. The cerebro-spinal fluid was increased in amount. There was no tubercular or syphilitic history obtainable.

DERMATOLOGY.

IN CHARGE OF W. A. HARDAWAY, A.M., M.D.,
Professor of Skin-Diseases in the Missouri Medical College, St. Louis;

ASSISTED BY

C. F. HERSMAN, A.M., M.D.,
St. Louis.

Experiments with Serotherapy in Syphilis.—Gilbert and L. Fournier (*Medical Week*, June 14, 1895) give some account of their experiences with serum in the treatment of syphilis. A review of the earlier work is given. Serum from such animals as dogs, sheep, calves, and rabbits, which are known to be refractory to syphilis, was used. Under this treatment some benefit, such as lessening of the anæmia and cicatrization of syphilitic lesions, was noticed, but the liability to the later effects of the malady was in no way lessened. Pellizzari then used the serum from persons who had entered upon the tertiary period of syphilis, arguing that the toxin contained in their blood might arrest the malady in its earlier stages. That syphilis does produce a substance which is capable of affording a sort of vaccination against the disease is illustrated by the well-known law of Colles and also by the converse proposition announced by Profeta. In spite of these *a priori* arguments Pellizzari's treatment gave disappointing results, for, although the lesions which happened to be present at the time of the injections were benefited, the disease ran its further course unaltered. The failure of this method must be attributed to the fact that there is not sufficient antitoxin in the blood of a syphilitic to assure immunity in the person into whom it is injected.

The authors not only repeated the experiments of Pellizzari, but also endeavored to increase the immunizing quality of serum obtained from animals by previous inoculation of the animals with blood from syphilitics as well as with the chancres and from the papular lesions. In all seventeen

patients were subjected to injections with this serum. Some of these patients had been treated with mercury, and others had had no treatment. The author gives a full account of the result of the treatment in each case. As a whole it may be said that the results were contradictory and wholly inconclusive. In some of the cases improvement was noticed in the general symptoms, in a few the cutaneous rashes disappeared, while in others there was no appreciable effect.

Trichophytic Blepharitis.—Mibelli (*Medical Week*, January 11, 1895) thinks that blepharitis of children is more often due to the trichophyton than is supposed. It clinically very closely resembles the ordinary form of the disease, but is more apt to be confined to the lids of one eye, while it is usually possible to find some hairs broken off at the level of the lid. Often there are patches of ringworm on other parts of the body. A microscopical examination will reveal the true nature of the disease. The treatment recommended is systematic epilation of the diseased hairs, washing the margins of the lids with a two-per-cent. corrosive sublimate solution, and alternate applications of tincture of iodine and the following ointment:

℞ Sulphur, 10 grains;
Salicylic acid, 6 grains;
Vaseline, 5 drachms. M.

Some Points in the Treatment of Syphilis.—Wickham (*British Journal of Dermatology*, June, 1895) gives some of the more recent views held in France as to the treatment of syphilis. Abadie is a warm partisan of the treatment by the intravenous injection of the preparations of mercury. He uses a one-per-cent. solution of cyanide of mercury. The syringe is made entirely of glass, so that it can be perfectly sterilized. The arm is ligatured about its middle with a handkerchief to make the veins of the forearm swell. The vein is selected and the skin thoroughly sterilized. The syringe, holding one gramme, is completely filled. The needle is passed through a flame and then gently pushed into the vein, being held almost in the direction of the axis of the vessel till it is felt to be in the cavity of the vein. The handkerchief is removed and the piston of the syringe is gently pushed home; an antiseptic dressing is applied. Abadie has made more than four hundred injections without bad results. It is claimed that this method is more energetic than any other manner of giving mercury, and it is free from the objections of the ordinary hypodermic method of administering mercury, such as painful nodes or even abscesses at the sites of puncture. It is the opinion of some of the best syphilographers in France that this method ought to be reserved for exceptional cases, as one can very readily see that it is capable of causing serious accidents.

It is universally admitted that treatment should be begun early in syphilis. The only question is, ought one to begin when a probable diagnosis of chancre can be made, or ought he to wait for unmistakable

evidences of syphilis? The author does not believe that a diagnosis can be made, based on the appearance of the chancre alone. The following points ought to help to confirm the diagnosis at an early period (before the roseola): 1, the peculiarities of the sore; 2, the adenopathy; 3, the chronological history of the sore; 4, confrontation; 5, absence of the strepto-bacillus of Ducrey and Unna, to eliminate the possibility of soft sore; 6, the evolution of the sore watched for a period.

The author sides with Fournier in believing that for the vast majority of cases the treatment continued over long periods and interrupted at times is the best. The other method should be reserved for emergencies or cases of peculiar obstinacy.

OBSTETRICS AND GYNÆCOLOGY.

IN CHARGE OF RICHARD C. NORRIS, M.D.,

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Tetany in Pregnancy. (*Johns Hopkins Hospital Bulletin*, May to June, 1895.) By H. M. Thomas, M.D.

The important features in the case reported are that the disease had lasted twelve years, and bore a most interesting relation to the six pregnancies through which the woman had passed during this time. She was always perfectly well during the first half of pregnancy, but had then daily attacks of tetany, which became more violent and alarming with each succeeding pregnancy. For three or four weeks before confinement she had no attacks, and only once during labor did she have the spasms, but on the ninth day after confinement she had always suffered from a severe attack, except in the case of her last confinement. While nursing her babies she was free (with one exception), but when menstruation reappeared, she was subject to tetany at each period during the cold weather. In April, 1894, when she was comparatively well, there was no difficulty in demonstrating Trousseau's symptom, the facial phenomenon, and a very great increase in the electrical excitability of the nerves.

The circumstances which combine to cause tetany during pregnancy must be extremely rare; the fact that there are not more than twenty cases recorded sufficiently proves this. In looking for a possible explanation, certain experiments made by Dr. William S. Halsted, and as yet unpublished, seem to bear particularly on the subject. He found that dogs always died with symptoms of tetany when both thyroid glands were removed, but that he could keep them alive for an indefinite time without symptoms if he took away the gland piecemeal in several operations. Two of his dogs which were undergoing this procedure became pregnant. The first had lost the left thyroid gland four months previously. For two

days before she gave birth to her pups she had convulsions, and behaved just as did the dogs whose thyroids had been completely extirpated. The left thyroid of the second dog had been removed and one-third of the right three months before she became pregnant. The day before her pups were born she had tremor of the tongue, and general clonic and tonic convulsions. These experiments seem to show that the mutilated thyroids were quite sufficient for ordinary circumstances, but that pregnancy or labor introduced conditions which required additional work which they were unable to perform.

May not the occurrence of tetany in women depend primarily upon some abnormality in the function of the thyroid gland, and the unusual demands made upon this organ in the later months of pregnancy make this a favorable time for the occurrence of the attacks? Gottstein's case, which has just been reported in the *Deutsche Zeitschrift für Nervenheilkunde*, March 15, 1895, is important in this connection. A diagnosis of tetany due to atrophy of the thyroid gland was made. After treatment with thyroid extract a marked improvement was at once noticed.

Cancer of the Uterus removed by the Use of Chloride of Zinc. (*British Gynæcological Journal*, May, 1895.) By F. Bowreman Jessett, F.R.C.S.

At the meeting of the British Gynæcological Society, March 14, 1895, the writer showed a specimen representing a cast of the entire uterus, which he had removed by packing the uterus with chloride-of-zinc paste for extensive carcinoma uteri.

The patient, aged forty-eight years, had a very offensive vaginal discharge for seven months, which finally became more watery and frequently blood-stained. There was a deep ulceration in the cervix which easily admitted two fingers. The growth extended more to the left side.

Under ether the ulcerated parts were scraped with the uterine dredges and Volkmann's spoon, the cavity was packed with wool and freshly-prepared zinc-chloride paste, and the vagina was packed with tampons soaked in bicarbonate of soda solution. On the second day the tampons were removed from the vagina, and it was syringed out daily. On the twenty-fourth day, apparently the whole uterus came away as a slough. The patient soon recovered her health, and now, four months after operation, there is no sign of recurrence.

Intra-Uterine Infection with the Typhoid Bacillus. (*Berliner klinische Wochenschrift*, June 27, 1895.) By H. W. Freund, M.D., and E. Levy, M.D., of Strasburg.

In this case a miscarriage took place in the fifth month of pregnancy, and during the fourth week of an attack of typhoid fever diagnosticated by the temperature curve, dicrotic pulse, swollen spleen, roseola, and loose stools.

Cultures made from the spleen and heart's blood of the fœtus, and from the placental blood, gave numerous colonies of an organism which proved to be the bacillus of typhoid. Cultures made from the outer surface of the placenta and from the vernix caseosa on the fœtus were sterile.

No abnormality was found in the fœtus, except a somewhat enlarged and slightly softened spleen. The intestine was normal. The infecting organism entered the fœtus through the blood, and caused a septicæmia such as has been observed in other cases of intra-uterine transmission of organisms. The characteristic lesions of typhoid may not be found, because the functions of the organs of the fœtus have not been established, just as, for a similar reason, pneumonia is not present in cases of intra-uterine infection with the diplococcus pneumoniæ of Fränkel.

Albuminuric Retinitis of Pregnancy. (*Berliner klinische Wochenschrift*, May 6, 1895.) By P. Silex, M.D.

By an ophthalmoscopic examination the retina is usually found to be cloudy and opaque; the papillary margins are irregular and the papillæ swollen; the veins are dilated and tortuous, the arteries contracted and presenting whitish borders along their walls. In the earliest stages one may see along the vessels and papillæ and in their neighborhood the central arterial reflex, which is transformed into a long, shimmering, golden strand of varying breadth, but always broader than the normal reflex. The retina shows fatty degeneration in the form of white spots that have a star-shaped appearance on the macula, and also larger, round, and striated blood-red flakes. Dark and light red spots indicate involvement of the pigmented epithelium. These changes are often seen in other retinal affections, as in neuro-retinitis of intracranial origin, and in a great number of cases it is difficult to decide whether this condition is due to Bright's disease or to the pregnancy. Hemorrhages may be more frequently found in the retinitis of pregnancy.

The author concludes, from his own observations and from cases cited by others, that the disturbance in sight comes on gradually, in the course of weeks or months, is most frequent in primiparæ, and develops usually in the latter half of pregnancy, at the time that albumin is most frequently found in the urine. The vision becomes lessened, without contraction of the field, and without disturbance of the color sense; sometimes, especially if associated with the eclamptic condition, the sight disappears, then gradually reappears, whether the pregnancy is terminated naturally or artificially. The patients complain of headache, nausea, and vomiting; œdema is present, and the urine is diminished, dark-red in color, and contains a large amount of albumin, with hyaline or very seldom granular cylinders, and much fatty epithelium.

The prognosis in this form of retinitis is better than in Bright's disease or in acute nephritis. According to the investigations of this writer, the restoration of sight seems to depend on the promptness with which the

pregnancy is terminated, whether spontaneously or artificially. In three cases of the twenty-one reported the sight was fully restored. In two patients, who were under treatment during a period of four weeks before the termination of pregnancy, the sight was two-thirds of normal; and, as a rule, if pregnancy is allowed to continue, only partial sight is restored, and sometimes the patient becomes permanently blind. In sixteen cases in which the pregnancy went on to term, or was terminated during the last week, the sight was restored to one-half in six, one-third in two, one-quarter in two, one-fifth in one, one-sixth in one, one-twelfth in two, one-eighth in two, one-hundredth in five. In most cases both eyes are affected equally. Those cases in which the ophthalmoscope shows no changes in the vessels and no alteration in the vessel-reflex are relatively the most favorable; but if the reflex changes are distinctly visible, or the hyaline changes are found in the vessel-walls, then atrophy of the retina and ascending atrophy to the optic nerve must be feared. Relapses of retinitis often occur in later pregnancies, and the prognosis is less favorable at each recurrence.

Streptococcus Infection from Mother to Fœtus. (*Centralb. f. Allg. Path. u. Anat.*, 1895, vi., No. 2.)

Ricker reports a case of a woman, twenty-seven years of age, who died in the sixth month of pregnancy of a disease diagnosticated diphtheria. By careful bacteriological examination the streptococcus pyogenes was the only germ found, and it was also obtained in pure culture from the placenta and from the liver of the fœtus. No lesion was found in the fœtus.

The writer recalls a second case, in which the streptococcus was found in the blood of the umbilical veins of a still-born child whose mother died shortly afterwards from the effects of a phlegmon of the arm, which was present at the time of the birth. In neither of these cases was any lesion of the placenta discoverable.—*American Journal of the Medical Sciences*, May, 1895.

PATHOLOGY.

IN CHARGE OF ALLEN J. SMITH, A.M., M.D.,
Professor of Pathology in the Medical Department of the University of Texas, Galveston, Texas,
AND
HENRY W. CATTELL, A.M., M.D.,
Demonstrator of Morbid Anatomy in the University of Pennsylvania; Prosector to the American Anthropometric Society; and Pathologist to the Presbyterian Hospital, the Institution for Feeble-Minded Children at Elwyn, etc.

The Identity of Diphtheria in Man and the Lower Animals. (*Bulletin de l'Académie royal de Médecine de Belgique*, 1895, vol. ix., No. 4.) By Léon Gallez, of Châtelet.

In an interesting and exhaustive work upon this subject, the author

states that the bacteriological proof of the non-identity of the diphtheritic organisms found in man and the lower animals, such as the pigeon, chicken, calf, rabbit, cat, dog, horse, and pig, is not conclusive. On the other hand, the numerous observations of the transmission of the disease from man to the lower animal, nine cases being cited from the literature upon this subject, and *vice versa*, seventy-two observations, are considered by Gallez to be almost positive proof of the identity of the different organisms which have been described in connection with diphtheria in man and the lower animals. Four histories are also given in which the transmission of human diphtheria to an animal has been in return followed by its re-communication to man. While the morphology is different, it is not more so than can be explained by the variations of the Klebs-Löffler bacillus as seen upon different culture media, likewise the symptomatology differs on account of the various anatomical peculiarities of the different species of animals in which the disease occurs. The author considers that we have in animals both an accidental form and an habitual one, the latter being merely a repetition of the culture of successive generations in the individual of the same species, the organism finally taking on special characteristics.

On a Case of Primary Cancer of Bone. (*Glasgow Medical Journal*, May, 1895.) By John Lindsay Steven, M.D., and J. R. McCheyne Miller, M.A., M.B., C.M.

The authors report an autopsy at which were found a tumor of the seventh right rib, an area of consolidation of the right lung, and a bulky tumor of the left ilium. These growths were examined microscopically and were all cancerous in character. The nodule in the lung is considered secondary, and the tumors of the bones the primary formation, for the following reasons: The size of the tumor is much less than is usually the case in cancers of the lung. The tumor was situated on the lateral surface of the lung, an unusual site for primary cancer of the lung. The tumor of the lung was in immediate relationship to the costal tumor, suggesting a direct extension from the rib. The microscope revealed occasionally a close relationship of the cancer elements to the perivascular lymphatic spaces of the pulmonary arteries, suggesting an embolic rather than a primary origination in the lung.

The Micro-Organism of Cancer. (*Lancet*, June 29, 1895.) By James Braithwaite, M.D. (Lond.).

The writer observed the rapid spread of a very superficial epithelioma on the vulvar mucous membrane, and also of a small rodent ulcer on the cheek. In both cases the mode of growth was by invasion of apparently healthy epithelium at the margin of the disease. Reflecting upon these cases and also upon the remarkable discovery made by Mr. Haviland that cancer exists endemically in populations living upon low-lying moist soils and in certain "cancer-houses," the conclusion seemed highly probable that

the disease is caused by a micro-organism, a fungus, and not, as supposed, a bacterium, coccidium, or protozoön. In a large Jewish population in Leeds not one Jewess has been found to have cancer of the genital organs, whereas the disease is extremely common among the Christian women. This observation led to an examination of the secretion frequently contained within the prepuce. Spores and mycelium were found, and this fungus was identical in appearance with one since found in epithelioma taken from the ear, the uterus, the breast, the lip, and the penis, and which could be demonstrated without any difficulty.

The mode of preparation of the tissue to be examined is as follows: Whether the tissue has been in spirit or is quite fresh, cut out from the centre a very small block, except in case of cancer of the lip, when the free margin should be included. Cut thin sections, place in water, float them on slides, and drain off the water. Drop three or four drops of liquor potassæ on each section and let it stand from twenty minutes to four hours, according to its opacity and thickness. When fairly transparent, wash thoroughly in water and mount in Farrant's solution; or if it is desired to examine the section quickly, put a drop of liquor potassæ on it and then adjust the cover-glass. The mycelium comes out gradually more and more distinctly for two hours and then slowly fades. This is due to the fact that the fungus, with its mycelium, spores, and spore-bags, resists the potash longer than the tissues proper. The mycelium will take no dye, and none is required, for its great refracting power makes it stand out clear and distinct in outline. In the breast cancer, which contained live fungus, the greater part of the life cycle could be studied from a section. At first a spore-bag, which consisted of a delicate envelope containing a fused mass of spores, was seen; a rupture of the membrane followed, and from the opening, usually on one side, the mycelium grew and penetrated in every direction. On the next day not a trace of mycelium could be found, but the slide was one mass of spores. In these living spores the process of conjugation could be seen. Two spores in contact become fused into one; three or four or even ten or twenty may become so fused and form a large spore mass.

The life of the fungus seems to consist of four stages: (1) spores, (2) zygospores, (3) spore masses and spore-bags, and (4) mycelium. A melanotic sarcoma was examined and a fungus found whose mycelium resembled that in the epithelium, but the spore masses contained as many as fifty to two hundred bags, and were egg-shaped instead of round. The spores were of a blackish color. The writer believes this micro-organism to be the cause of cancer, as it was present in every one of the six specimens examined.

FORENSIC MEDICINE.

IN CHARGE OF LORENZO D. BULETTE,
Of the Philadelphia Bar.

WORTHLESSNESS OF MEDICINE EXCUSES REFUSAL OF PATIENT TO SUBMIT TO TREATMENT AND DEFEATS ACTION BY PHYSICIAN TO RECOVER HIS FEE.

WHERE a physician brought an action to recover his fee under a contract with the patient of "no cure no pay," and it was shown that the patient refused to submit to the treatment, the latter may prove that the medicine used was worthless, and in order to do so may compel the physician to testify as to the ingredients of which it was composed.[1]

The evidence at the trial showed a special agreement between the parties by which the physician agreed to cure the patient of hemorrhoids for one hundred dollars, "no cure no pay." Further evidence was introduced tending to show that there was a breach of contract on the part of the patient by his refusal, without sufficient excuse, to submit to further treatment from the physician after he had been treated several times; that after the last treatment the physician several times called upon the patient to submit to further treatment, and upon the latter's refusal to do so, brought action to recover the sum alleged to be due, under the contract, for his services.

The physician, when asked what the medicine was which he used as an injection in treating the patient, refused to answer, on the ground that it was his own preparation and discovery. And the trial court sustaining him in this refusal, exception was taken in behalf of the patient, who stated that he expected to prove by other witnesses that the medicine was worthless, and would not have benefited him, even if he had submitted to its use.

The trial court also charged that, "if the jury find that the plaintiff was ready to complete the execution of his part of the contract, and the patient refused to submit himself to treatment by the physician without good excuse, and the latter waited a reasonable time before bringing suit, then he is entitled to recover the amount sued for."

But the Supreme Court, in reversing the judgment entered on a verdict below for the physician, said, "It was perfectly relevant to prove that the

[1] Jones *vs.* King, 1 S. Rep. 591.

medicine used by the plaintiff was worthless, and possessed no efficacy in producing the results for which it was used. In order to do this, the defendant could prove the ingredients and nature of this medicine. The plaintiff had no property in the secret of his remedy, such as the law would privilege him from disclosing. The fear that such disclosure might give others the benefit of his skill would not excuse him in refusing to testify as to the nature of the medicine. His only mode of protection was by procuring a patent for the discovery. When he became a witness it was for the purpose of testifying to all material and relevant facts within his knowledge not privileged by law from disclosure. The trial court erred in excluding the question having reference to this inquiry."

BOOK REVIEWS.

DISEASES OF THE EAR. A Text-Book for Practitioners and Students of Medicine. By Edward Bradford Dench, Ph.B., M.D., Professor of Diseases of the Ear in the Bellevue Hospital Medical College; Aural Surgeon to the New York Eye and Ear Infirmary, etc. Pp. 645, 8vo, with 8 colored plates and 152 illustrations in the text. New York: D. Appleton & Co., 1894.

This new text-book is a credit to American otology, and will go far to relieve us of any necessity of commending as best the treatises of foreigners. Written with appreciation of both classic and current literature, and with wise selection of the views, instruments, and illustrations of others, there is yet much that is original in the author's matter and manner,—if only at times in avoiding the usual errors, which constant repetition has made appear authoritative.

The chapter on anatomy is exceptionally accurate, and its illustrations are well chosen, but the half-tone rendering of the author's preparations leaves much detail suggested rather than defined,—falling far short of the corresponding pen-drawings. Those of the adult auditory canal in vertical section, which figure repeatedly throughout the work in excellent elucidation of conditions and procedures, fairly show the relations, but give the canal a length of barely twenty-five millimetres, instead of more than thirty-five millimetres, from the tragus. His black-and-white drum-head pictures are generally far less happy than the colored plates. We miss any illustration of the postnasal image,—perhaps a silent protest against most of the diagrams which do poor service elsewhere; but the verbal description of the tube-mouth hardly conveys any idea of the clinical picture. The very lucid diagram of the topography in relation to operations on the antrum, lateral sinus, and brain is on an unusually small scale, and is open to criticism as showing too high and posterior a point for entering to open the antrum according to his own excellent rules. The middle cerebral fossa is rarely some twelve millimetres high, as shown, the average in a thousand measurements being but six millimetres above the upper margin of the canal, and in one-third of the cases it was less. Leidy's admirable name of "attic" for the epitympanic recess is evidently avoided, while he generally calls the tympanum proper the "atrium;" nor does he follow our American authority in considering the antrum as the posterior part of the tympanum, and not a mere

mastoid cell. Much of the best clinical recent work of which our author is an exponent has crystallized about these names and views of Leidy's, and it seems a pity that they are not universally adopted, in America at least.

The book shows throughout the evidence of scrupulously minute observant work and keen insight into the difficulties which beset the student, as revealed to the active, zealous teacher. Yet much of his advice is over the heads of most of his audience, and will find too few of his colleagues prepared to appreciate it. His views on most points, even those most in conflict with the majority of authors, meet the reviewer's fullest approval, although amidst so much detail there must be points of divergence, such as syringing with "lukewarm water" to remove cerumen, instead of using it as hot as can be borne.

Asepsis is the key-note of much of his teaching, and he accords much potency to bichloride solution (1 to 8000) and little to H_2O_2, which he uses too dilute. He is very much alive to the occurrence of moulds, while his care in boiling his specula exonerates him from any suspicion of propagating them among his patients. He is quite advanced in his views of surgical intervention, and advocates measures which would hardly be safe in the hands of many of his colleagues, and not at all for "practitioners and students." Much careful detail is given to the subject of intratympanic operations, of which the author is a warm but cautious advocate. Few who have published statistics of results have exercised anything like the same discrimination in selecting cases and consideration of every minutest point in operation and after-treatment. His results are accordingly above the average: of twenty-one non-suppurating cases excision, under cocaine, gave much improvement in thirteen, and moderate in seven; and of thirteen, under ether, two were greatly, five much, and five slightly improved. Of forty-two suppurative cases twenty-three were cured, thirteen much improved, and the remainder were lost sight of before the gain was assured. Stacke's operation he thinks little of, and in mastoid operations he destroys all the pneumatic cells, after chiselling off the cortex. The work tempts one to a hundred comments, generally favorable and always respectful; but it will encounter much hostile criticism at the hands of some reviewers. Its typography is worthy of its publishers. B. A. R.

A Manual of Bandaging. Adapted for Self-Instruction. By C. Henri Leonard, A.M., M.D., Professor of the Medical and Surgical Diseases of Women and Clinical Gynæcology in the Detroit College of Medicine. With 139 engravings. Sixth edition. Published by the Illustrated Medical Journal Company, of Detroit.

It is sufficient evidence for the need of such a book as this that this treatise on bandaging has reached its sixth edition. There are other books, however, which already completely cover the ground which it was intended that this work should occupy. Dr. Hopkins's "Roller Bandage" is a smaller, cheaper, and better book on this subject, while the work of Dr. G. G. Davis also claims precedence. The illustrations in Dr. Leonard's book are rough specimens, and do not reflect much credit on the printer's art. The illustrations used in recent works on minor surgery, such as that of Dr. H. R. Wharton, are infinitely better, taken as they are from photographs of bandages actually applied on patients.

Taking it all in all, this book has little to recommend it. As a treatise on bandaging it is too long, and as a work on minor surgery it is much too short and incomplete. In practical work it would be difficult to carry out the suggestion of the author when he advises the application of a close-fitting flannel or cotton cap to the head before the application of any bandage. In the chapter on immovable dressings there is little said that would be of any practical use, and no mention at all is made of the ordinary plaster roller, which finds such a wide-spread application

in general surgery. The Watson shears-saw is a combination which would make a most ungainly instrument, and one which, judging from the illustration, it would be most difficult to employ. J. P. T.

COLECCIÓN DE ARTICULOS DE MEDICINA. Por el Dr. Enrique López. Habana, 1895.

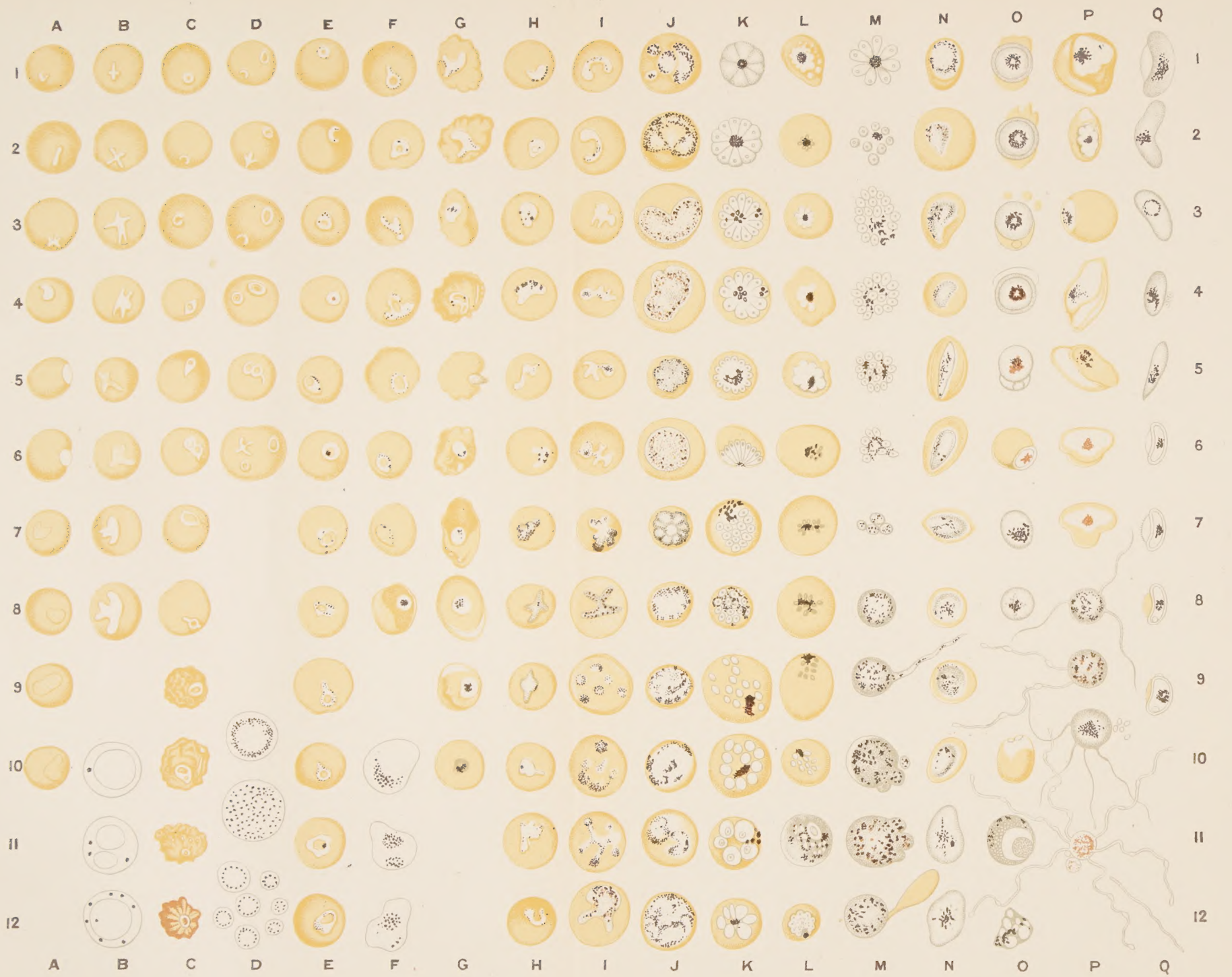
This is a small 8vo of about two hundred and fifty pages, in which the author has gathered together his principal articles already published in different journals and magazines, both professional and non-professional, many of them now enlarged and corrected. We notice that four of the articles were published in English and French medical journals, but Dr. López forgot to give credit to his *confrères* who made the translation for him. Probably the book is merely for gratuitous distribution among the friends of the author. A. M. F. DE Y.

NOTES ON THE NEWER REMEDIES, THEIR THERAPEUTIC APPLICATIONS, AND MODES OF ADMINISTRATION. By David Cerna, M.D. Second edition. Enlarged and revised, pp. 250. Philadelphia: W. B. Saunders, 1895.

The rapid progress of pharmacology makes it almost impossible for the ordinary, or even the special, practitioner to keep himself thoroughly *au courant* with the newer remedies which chemists and pharmacists place at his disposal. The author states that it has been his endeavor in preparing this "ready-reference *vade-mecum*" to place briefly and succinctly before his readers a description of the chemistry, pharmaceutical and physiological properties, and the therapeutics of all the newer remedies, and, when practicable, of their toxicology. In this new edition the work has been thoroughly revised, many of its articles rewritten, and all the more recent additions to our therapeutic knowledge concerning the newer drugs incorporated. We have examined the book carefully, and consulted it on several occasions. We can commend its accuracy. We regret that all bibliographical references have been omitted. It seems to us that it would enhance the value of the book, and add very little to its volume, to have given references to the more important writings on the several drugs. Notwithstanding, we cordially recommend the work, and are confident that it will fill a recognized want. A. D. B.

A BOOK OF DETACHABLE DIET LISTS AND A SICK-ROOM DIETARY. Compiled by Jerome B. Thomas, M.D. Philadelphia: W. B. Saunders. Price, $1.50.

The book affords suitable diet lists for cases of albuminuria, anæmia and debility, constipation, diabetes, diarrhœa, dyspepsia, fevers, gout or uric acid diathesis, obesity, tuberculosis, and general receipts useful in the sick-room. By the use of numbers the above-mentioned terms are avoided in the lists themselves. Their great value consists in affording the doctor a convenient method of prescribing a suitable diet in a manner which is explicit and easily referred to by both physician and patient. The items enumerated embrace a fuller list of articles allowable and forbidden than will occur to one at the moment of consultation. These lists are invaluable for office practice.



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